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THE awards granted by the American Institute Fair in this city have declined in value from year to year, until they have become a by-word, and not a few persons believe that they have become simply a question of exhibiting and of money. Certainly, the loose, promiscuous, and careless manner in which they have been made justifies the belief that merit has but little to do with them, and the number of prizes would seem to those charitably disposed to make the mere fact of exhibition the ground for an award.

The American Institute, at its last fair, closed a few weeks ago, has outdone all its former record in the prize-giving line, and according to public announcement—which has not been contradicted or corrected—it has given its highest premium to a machine that *was not even exhibited*. We read in these public announcements that Mr. S. R. KROM obtained a medal for *superiority* for pneumatic ore concentrators, while neither he nor any one else exhibited such a machine.

Neither merit nor mere exhibition could have had any thing to do with this announcement, and every one knows that Mr. KROM is above buying an unearned award, whatever the American Institute may be willing to do in granting one. Naturally, Mr. KROM desires to have this erroneous statement corrected.

We do not believe that any importance is attached to the prizes granted by the Institute under its management for some years past; but this climax to the course, which has brought into ridicule an institution capable of doing much good will, we trust, awaken those interested to the necessity for a very radical change in its management.

ENGLISH AND AMERICAN LOCOMOTIVES.

When the relative economy of American and English railroads was discussed some months ago, before the American Society of Civil Engineers, by Mr. EDWARD BATES DORSEY, we emphasized his figures by pointing out that, though American roads are rougher than the English, and our locomotives cheaper, yet the cost of transporting freight and passengers is scarcely more than half as much in this country as in England.

Some eminent English authorities still maintained that American locomotives were inferior to English on good roads. Now we commend to these gentlemen and to our contemporaries the following figures given by Mr. DORSEY from the official reports.

The figures of cost are total cost of repairs and renewals of locomotives for moving one ton or one passenger one mile:

UNITED KINGDOM, 1884.	Locomotive cost. Cents.
Caledonian Railroad	·102
Great Eastern	·092
Great Northern	·086
Great Western (1883)	·105
Great Southern & Western of Ireland	·115
London & Northwestern	·082
London & Southwestern	097
London, Brighton & South Coast	·073
Midland	·101
Northeastern	·141
Southeastern	·060
Average of 11 railroads	·096

UNITED STATES.	Locomotive cost. Cents.
Pennsylvania Railroad Division	·044
N. Y. Central & Hudson River RR.	·035
Louisville & Nashville, Main Line	·041
Nashville & Decatur	·037
South & North Alabama	·044
Mobile & Montgomery	·045
New Orleans, Mobile & Texas	·040
Knoxville Branch	·052
Memphis Line	·059
Henderson Division	·041
St. Louis Division	·061
Cincinnati Division	·049
Lexington Branch	·048
Chicago, Rock Island & Pacific	·037
Philadelphia & Erie	·043
Average of 15 railroads	·045

Here we have eleven of the principal railroads of the United Kingdom compared with fifteen representative roads of the United States—some of the best and some of the most cheaply constructed; for example, the Knoxville Branch, which only cost $26,464 per mile. Yet in every case, with a single exception, the highest cost on the American road is less than the lowest English, *and the average American cost is less than half the English.*

If the English locomotives had run with the same economy in "repairs and renewals" as the American, there would have been saved on the traffic of the United Kingdom in 1884 over $7,500,000.

We wish our English contemporaries would publish the table in full and ask their engineers to explain it, unless, indeed, they agree with us that it is superior design and workmanship that enable the American locomotive to do the same amount of work at less than half the cost.

THE NEW COMSTOCK BONANZA.

We have received so many inquiries concerning the new bonanza of the Consolidated California & Virginia on the Comstock that we give further illustrations taken from the maps of the Geological Survey, with the addition of the supposed new bonanza, located from information derived from a gentleman connected with the management of the mine

These maps are exceedingly instructive, and as they are from actual survey, except as to the "new bonanza," and have never before been published outside of the Geological Survey reports, they afford more information than has, up to this time, been made public.

The new ore-body is not in what is known as the Comstock proper, but in the "hanging-wall" porphyry. It is in the "broken ground" to the east of the old bonanza, on the California, where the old bonanza had suddenly become narrow, as shown in our illustrations.

The date of discovery is still a secret, but it is generally supposed that it was known, by diamond drill holes, as much as two years ago.

It has been opened by cross-cuts from the 1436-foot level, shown on the annexed maps, and is said to be an important body of ore, although, as no specific information is allowed to leak out, the extent of the body and the richness of the ore are only matters of surmise to outsiders. One of the bonanza firm is reported to have said that it is "good for twenty millions;" but just which way this "point" should be taken we do not pretend to decide.

The same authority is reported as intimating that it has been found to go up as high as the 1200-foot level, and probably extends down to the 1600-foot level, and that it appears to extend toward the Ophir; but no one has yet said that it has been found that far.

There are, of course, the usual rumors of ore-bodies reported by "miners who worked in the mines," on several of the other Comstock claims; but these are even more shadowy than the limits of the new Consolidated California & Virginia ore-body.

The break in stocks that began in San Francisco ten days ago, and culminated in this city this week, fully confirmed the advice we

have so often given to investors. The gambling in stocks of worthless mines, in pure wild-cats, and, as has happened here recently, in stocks of companies that long ago ceased to exist, brought more rapidly than usual its bitter fruit.

This gambling should not, however, affect the public interest in legitimate mining investments, which are to-day the most profitable that can be undertaken. Many of our good mining stocks are now selling at figures that net from ten to thirty per cent per annum, and in mines that have large reserves and therefore an assured future.

Southern coal and iron, which have received a shock by the sudden decline of Tennessee Coal and Railroad Company, are still deservedly popular investments ; and as they have a very substantial basis for success and large dividends, they will continue to attract more and more attention. Our gold and silver mines are doing well, and, as the reports in our columns each week testify, are earning larger dividends than for many years past—indeed, larger than ever before, if we consider the number of mines that contribute to the very satisfactory total that we publish.

CORRESPONDENCE.

[We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested.
All letters should be addressed to the MANAGING EDITOR.
We do not hold ourselves responsible for the opinions expressed by correspondents.]

Cost and Manufacture of Coke.

We receive from a Pennsylvania works the following figures of actual weights of coal used to make one ton (2000 pounds) of coke :

At one works, from January 1st, 1885, to September 30th, 1885, on an average 3060 pounds of coal produced 2000 pounds of coke, although, our correspondent adds, "The scales in each case was not over-accurate." At another works, from January 1st, 1886, to July 31st, 1886, the average was 3093·2 pounds coal to 2000 pounds of coke. These figures on Youghiogheny coal are more favorable than is generally accepted, and, as they are from actual weights, they set at rest this question for the best practice in Pennsylvania, and fully confirm Mr. Fulton's figures.

We have not an average analysis of the coal and coke, so at present are unable to say what the loss of carbon in coking has been.—ED. E. AND M. J.

Coal-Washing Machinery.

EDITOR ENGINEERING AND MINING JOURNAL :

SIR : It has lately been of importance to the writer to get some information as to the capacity, price, etc., of coal-washing machinery ; but seeing no notice or advertisement of any of them, I have totally failed to get it.

Where is such machinery made, and by whom? MINER
(Care of ENGINEERING AND MINING JOURNAL).

Castner's Cheap Sodium Process.

EDITOR ENGINEERING AND MINING JOURNAL :

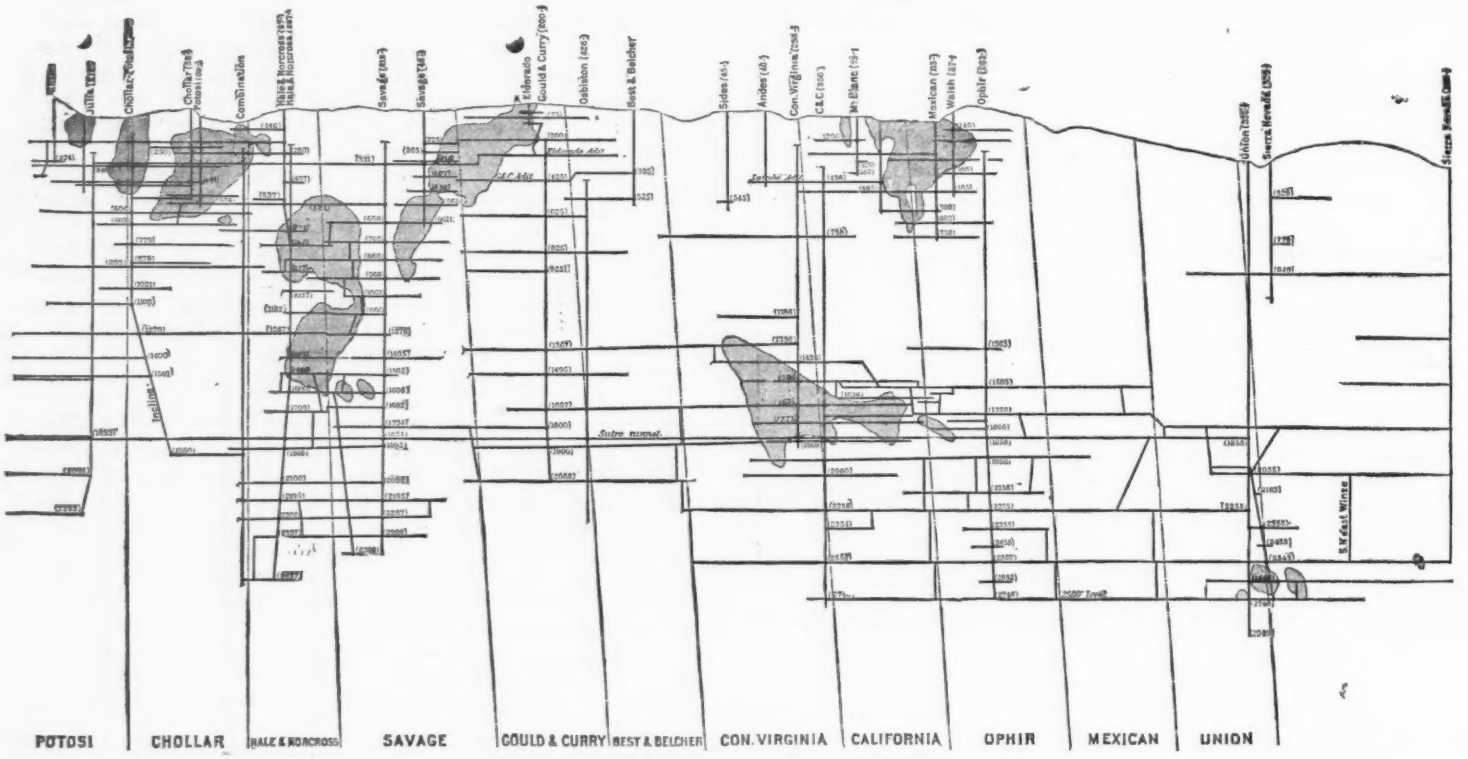
SIR : I am in receipt of a letter, dated London, December 4th, from Mr. H. Y. Castner, whose sodium process you have referred to on several occasions. He says : "I gave quite a successful exhibition of my furnace in operation a few days ago before several well-known experts Next week, both Dr. Percy and Professor Crookes have promised to come and see it, also many others. The following week, I give an exhibition to the scientific press of London, and nearly all of the technical journals here propose to send representatives." As your JOURNAL keeps abreast of scientific progress in the department of metallurgy, I have thought it probable that your readers would be interested in hearing of the movements of our young American inventor, who promises to make cheap sodium and aluminium possible. Very respectfully,

NEW YORK, Dec. 15. MARCUS BENJAMIN.

Changes in Ore-Veins.

EDITOR ENGINEERING AND MINING JOURNAL :

SIR : The report in the JOURNAL of the 4th inst. from the Joe Davis mine, situated on East Fryer Hill, adjoining the Tip Top mine, is interesting ; assays showing from 30 to 150 ounces of silver to the ton, and from 20 to 60 per cent of lead ; the ore being comparatively free from zinc or iron pyrites, and represented as being a *fine-looking* galena, with oxide of iron. Having had considerable experience in mining a blended ore, which I suspect this to be, I wish the superintendent of the Joe Davis mine would send a quantitative analysis. The European ores referred to were first discovered while driving on a poor copper lode containing sulphur 28 feet wide, which gradually developed a 2-inch vein of bluish ore, named by the miners "bluestone," and upon being analyzed produced the following results : Lead, 28 ; silver, 8 ounces ; sulphur, 26·10 ; zinc, 24·40 ; iron, 18·45 ; silica, 3·05. This was at a depth of only 60 feet from the surface, although the main shaft was down 1000 feet on the copper at the western end of the property ; and this occurred while driving eastward. A cross-cut was then made at the 120-foot level, where it was found two feet wide, the analysis showing an increase of silver ; another cross-cut was made at the 210-foot level, the analysis showing a further increase of silver. We then began stoping, and raised 800 tons from the backs, and put a winze down, where we found the lode measured 12 feet 3 inches, and the silver had increased to 18 ounces to the ton of lead. Now comes the most interesting part of this apparently new ore ; when a trial-shaft was put down on the run of the lode, half a mile to the eastward, it revealed a lode of argentiferous lead, and clearly demonstrated that the bluestone or blended ore was an ore in a state of transition from the copper in the west end of the property, to lead in the east end. I therefore think the Joe Davis mine may prove equally interesting and valuable ; although it would be more satisfactory if the assays were not so wide apart, and the geological formation more clearly defined. T. B. A.



THE BONANZAS OF THE COMSTOCK.

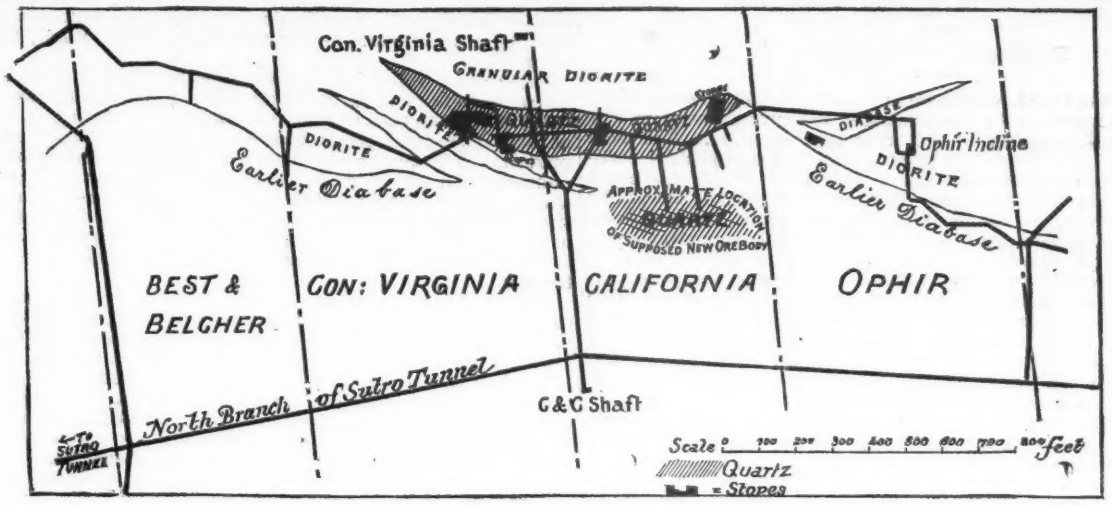
The Viola Mining and Smelting Company.

EDITOR ENGINEERING AND MINING JOURNAL :

SIR : I noticed, in your issue of November 27th, a letter written by Arthur Thatcher, about the Viola Mining and Smelting Company, with a note by the Editor of the ENGINEERING AND MINING JOURNAL. You state that "the ore is contained in pockets, in limestone, and, as is usual in such deposits, the quantity in sight is small and uncertain."

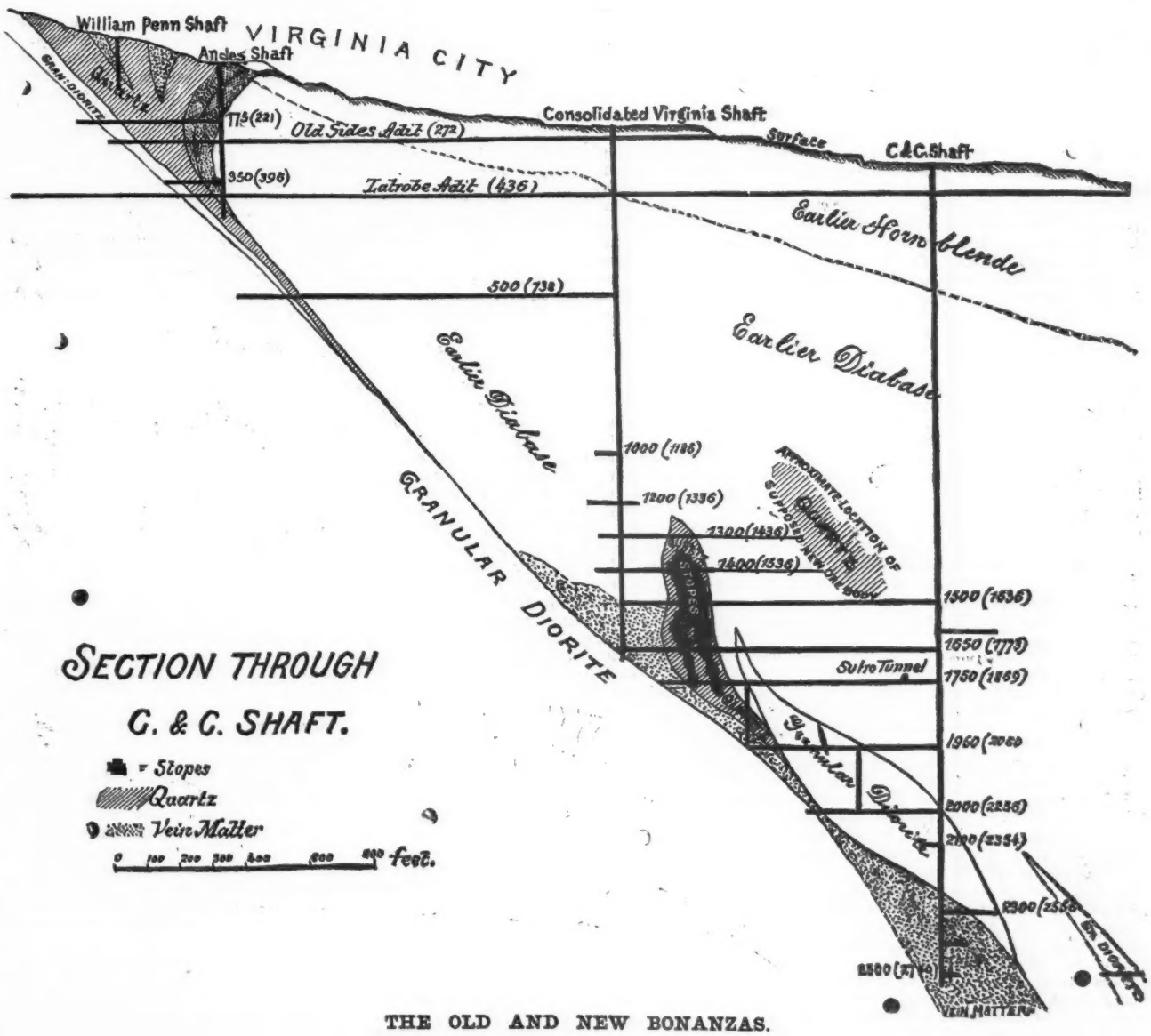
The information you have concerning this property must have been gathered from some one who had no knowledge of it.

The vein or ore-body of the Viola, so far as developed, is in limestone (limestone hanging and foot-walls), but the mine has by no means been pockety. The ore-body that we have worked for the past four years has not been very regular in thickness, but it is continuous for over five hundred feet along the vein. Even the new ore-body that Mr. Thatcher



SECTION OF THE COMSTOCK ON THE SUTRO TUNNEL LEVEL.

(Showing approximate position of the New Bonanza.)



THE OLD AND NEW BONANZAS.

(From the Maps of the Geological Survey.)

refers to is a continuation of the same vein. The vein, after running nearly horizontally for four hundred feet, takes a sudden change, and dips at an angle of forty-five degrees for about seventy feet on the incline, then runs off nearly horizontally again.

From Mr. Thatcher's figures, it would not be a difficult matter to approximate the amount of ore smelted.

You first suggest that Mr. Thatcher should have estimated the amount of ore in sight, and then assert that "the quantity is small and uncertain." I should be much obliged if you would publish this letter.

Yours truly, RALPH NICHOLS,
Superintendent Viola Mining and Smelting Company.

NICHOLIA, LEMHI CO., IDAHO, Dec. 4.

THE TENDENCIES OF MODERN ENGINEERING.*

By Eckley B. Coxe, Drifton, Pa.

Twenty or thirty years ago, when I was a student, the term non-resident lecturer was not employed. In most colleges, the professors were few in number and did all the work of lecturing and teaching. The field covered by each professor was often greater than that occupied by three or four, in analogous institutions, at the present time. There was much more theory and less practice taught. The greater portion of the public knew little, and cared less, about technical education. In fact, with many people, the possession of a theoretical education in engineering was considered rather a drawback to a young aspirant for a position. To-day, fortunately for you and fortunately for the United States, public opinion has changed very much and very wisely in reference to this subject. Our country is now blessed with many institutions where all branches of science are taught, both theoretically and practically, many of them endowed by men who, although they had little chance of obtaining such an education themselves, thoroughly appreciated the importance of it to the young men who were growing up around them.

The idea of inviting gentlemen who are engaged in the active pursuit of their professions, and each of whom is practically familiar with one or more of the problems that an engineer is obliged to meet and solve, to appear before and address the students who are actually engaged in acquiring their theoretical professional training, is a comparatively new one, and one which, to me at least, seems to promise much for the advancement of technical education in this country.

The function of the faculty in an institution of this kind is to put up, as it were, a skeleton structure, covering all branches of the science of engineering, giving to the student a thorough scientific and mathematical training, with broad general ideas of his subject, so that, when he has graduated, he will be able to work in the details of the particular part of the structure that he will be called upon to occupy during his life. It would be impossible for the professor, even if he were an expert in all the branches of engineering, to enter into every detail of all the departments of the profession; and even if he had the ability and time, he would only waste them both in endeavoring to instruct the student in the lecture-room in those things that can be acquired only by practical experience in the field, workshop, or mine. The most and best he can do is to give him a thorough scholastic and theoretical training, with some practical instruction in a few branches of the profession. For example, the professor of civil engineering can take his student into the field, and lay out sections of theoretical railroads and canals; or he can take him into the machine-shop, and teach him some of the more important details of the work done there, and which he may be called upon to supervise and carry out; or he can take him into the mine, and teach him how timbering, or pumping, or cutting coal is really done. Now, as you will discover hereafter, such instruction is of the highest value, but that broad, thorough, practical training in each one's specialty that is necessary to make an expert in any profession can only be acquired by actual contact, day by day, with the details of professional work. It is not possible for institutions of this character to give such thorough and complete theoretical and practical training that, when the students have graduated, they may be experienced engineers.

There has been much misconception, and, in some cases, much misrepresentation, in regard to the meaning of the diploma of a civil, or a mechanical, or a mining engineer. Young men sometimes enter a technical college with the idea that it is a royal road to learning, and that, by spending a few years in an institution of this kind, they will be capable of competing with those who have not only spent four years in obtaining their theoretical training, but perhaps a quarter of a century in the actual work of their profession. When a lawyer has been admitted to the bar, years elapse before he is fitted to try important cases in court; when a doctor has received a diploma, he tries to serve for several years as an assistant in a hospital. The best definition of the true meaning of a diploma that I ever heard was that given by my friend Prof. Albin Weisbach, son of the great professor of engineering. Some two years ago, talking over this subject with him, I asked him what he considered the true meaning of a diploma to be. He replied: "When we sign a student's diploma as mining engineer, we do not mean that he is really a mining engineer, in the broadest sense of the word, but merely that he has pursued with intelligence and profit, and has passed a satisfactory examination in, those branches of pure and applied science that the experience of those best fitted to decide has shown to be essential to any one who intends to become a thoroughly educated mining engineer." While pursuing his studies, the student naturally acquires some little practical experience; but the greater part must be obtained in the workshop, in the mine, in the field, or at the furnace. Leaving college thoroughly well grounded in the true principles of science, and familiar with the theoretical parts of his profession, he is in the best possible condition to learn with the greatest rapidity, and the least loss of force, what is necessary to complete his education.

It is the duty of each professor in an institution of this character to keep himself abreast with the advance of science and technology in his own branch, and to be constantly on the alert to obtain the earliest and most accurate information as to what improvements are being made, not only in this country, but also in Europe, and to continually improve and enlarge his course of lectures; so that the student, upon completing his course at college, will have a good general idea of the present status of the branches of his profession included in the course which he has been pursuing. It is not possible for one man to cover them all or to be even moderately familiar with several in all their details. Science has become so broad and deep that, had Humboldt been born at the present day, he could not, even with his great mind, peculiarly fitted as it was for the study of general science, have occupied the position he actually did in his own time. He would of necessity have been forced to become more of a specialist.

It seems to me that the plan of calling in the non-resident lecturer is a wise one. He can not, of course, in the time which is at his command, communicate to the students all, or even a very small part, of the practical knowledge of his profession which he is supposed to possess. To attempt to do so would be to waste their time. What, then, should be his aim?

After much reflection, it seemed to me that, if each lecturer would endeavor to impress upon the attention of his hearers some one thought which to him seemed of vital importance, illustrating it with examples or facts taken from his practical experience, much good might be accomplished. With this end in view, I shall ask your attention to the consideration of the tendency of modern engineering, at least in one direction, and endeavor to explain it by a few examples drawn from the preparation of anthracite coal, a subject to which I have devoted a large portion of my professional life. If I should take a text for my address, it would be expressed in some such words as these: "Despise not the day of little things."

Engineering is a profession so broad and deep that men may spend their lives in it without ever coming in contact, or ever knowing of each other's work. Its tendency is toward specialties and detail work. While I would not of course be understood to say that great generalization, such as the law of the conservation of energy, and great discoveries and inventions, such as the steamboat, the railroad, and the telegraph, will not occasionally be made, yet such revolutionizing inventions are likely to become more and more rare in proportion to the number of persons engaged in the pursuit of science and the mechanic arts. The great progress of which we see such convincing proofs everywhere around us is not due, except in a very small degree, to the great inventors and discoverers whose names are in every one's mouth, but to the thousands of patient, conscientious, untiring, self-sacrificing, scientific workers who, in all parts of the world, are devoting their best energies to the careful investigation of details apparently so trifling, of subjects seemingly so devoid of interest, that until recently most of the world looked on, and wondered if they are really sane to work so hard to accomplish so little. Now, however, the men of business, those whose capital is invested in the great industries of the countries, are beginning to realize the importance of such work and the value of the men who are now doing it. Where one chemical analysis was thought sufficient a few years ago, hundreds are now made with much greater care and accuracy. No one thought or cared, then, whether iron or its ore contained a few hundredths of one per cent, more or less, of phosphorus. Now, the presence of this small quantity is a bar to their use for many purposes.

On some of our great railroads, no piece of iron is allowed to be used for the boilers of the locomotives until a test of its physical properties has been made. The lubricating and other oils used are no longer bought by guess, but accurate scientific tests and analyses are made, by which the article furnished is accepted or rejected. Hundreds, nay thousands, of such tests are made weekly, which but a short time ago would have been considered useless.

This great attention to detail work, and the amount which is done, acting with other causes, is accelerating the division of engineering into a large number of branches. I can almost remember when, outside of the army, there was but one kind of engineer, and that was simply an engineer. He was supposed to cover the whole field. Now, in addition to the military, we have the civil, mining, mechanical, marine, and electrical engineer, and many of these branches are subdivided; the mining engineer may be a coal mining engineer, a metal mining engineer, or a metallurgist; a civil engineer may be either a bridge engineer, a sanitary engineer, or a railroad engineer, etc.

It seems to me that there is nothing that gives us such a vivid idea of progress in civilization as this necessity for the continuous subdivision of engineering and the infinite variety of the detail work now being done. Therefore, my young friends, those of you who are soon about to begin the battle of life, and, with us older men, take your place in the ranks of the engineers of our country, I say to you, look calmly upon the prospect before you, but do not consider your profession as an easy one, promising great prizes and little work. If such are your hopes, you will undoubtedly be disappointed. The engineer of the future must be willing to devote his life to a continuous struggle, not expecting to win great victories, but only to aid in gaining very small ones. The aggregate of that done by us all, however, when combined, will do more than all that has yet been accomplished by the united efforts of the entire engineering world for the advancement of the human race. I wish to impress this upon you, knowing, as I do, how I felt when I began life as a mining engineer. It seemed to me that there were great things to be accomplished and great work to be done; but I found, as I advanced, that while great work *is* being done and great results accomplished—achievements such as the world has never seen—it is not due to the genius of the few, but to the patient and unremitting study and detail work of the hundreds and thousands engaged in our profession. Many a man whose name we do not know, whose life has been passed in some secluded spot, has contributed his mite to the advancement of our profession, and has gone down to his grave with no other reward for his unceasing devotion to the cause of science than the proud consciousness that, in some respects at least, he has left the world better than he found it.

Engineering is a grand profession. There are, it is true, but few prizes in it. You may or may not be so fortunate as to obtain one; but *you can always do your duty.* No matter how humble the position that you may be called upon to fill, no matter how uninteresting your work may seem to be, by carefully studying those phenomena with which you are placed in contact in your professional labors, by noting, observing, and experimenting when you have a chance, and by publishing what you have found of value, in the proceedings of the technical societies, or in the technical journals, you place the whole profession under obligation to you, and prevent waste or loss of valuable information.

There are men whose minds are peculiarly fitted to assimilate and combine the work which has been done by the thousands of careful observers and experimenters who are gathering the facts and the data which are absolutely necessary to the former in order to accomplish any thing of value.

[The lecturer here proceeded to give a very detailed description of the occurrence, mining, and preparation of anthracite coal, illustrated with maps, plans, and detailed drawings, which would be too long to reproduce here.]

Having given you, thus briefly, a general idea of the mining and prep

* Extracts from a lecture delivered at Cornell University, being one of a series by the "Cornell University Non-Resident Lecturers in Mechanical Engineering."

aration of anthracite coal, you will naturally ask, What has this to do with the tendency of modern engineering? My answer is this:

The modern breaker is not the invention of any one man or any dozen men. It has been brought to its present state of perfection by the intelligence, perseverance, observation, and experiments of thousands of men, who, for the last half-century, in all parts of the anthracite coal region of Pennsylvania, have been devoting their thoughts to the solution of the problem how to prepare anthracite coal in the best manner and with the least cost, how to improve the machinery and avoid waste. It is now impossible to say to whom we are indebted for many of the most important improvements. What to us who are now conducting these operations seems a matter of course was only learned by long-continued, patient investigation. Those familiar with coal breakers will understand what I mean when I say that in every breaker there is hardly a piece of machinery that has not been invented or improved by some one whose name is now most probably forgotten. If you compare the plan of the breaker built half a century ago, consisting simply of a set of chutes and bars to separate the coal into different sizes, with the plan of a modern one, with all its improved machinery, it is hard, even for an expert, to realize what an amount of brain work has been necessary to produce the result at which we have arrived to-day. Coal is mined, prepared, and sent to market which, but a few years ago, would have been valueless on account of the difficulty and cost of its preparation. Those who enter into this business, as those who enter into any other branch of engineering, will find that it is the small things, the details, apparently of the most trifling importance, which cause success or failure in business through life. Benjamin Franklin said, "Take care of the pennies, and the pounds will take care of themselves;" and I, paraphrasing this, would say to you, "Take care of the details of your professional work, and the great things will take care of themselves."

IMPROVEMENT IN OVENS FOR MAKING COKE FROM ANTHRACITE.

Dr. Bauer, of Munich, has recently made considerable improvements in the construction of ovens for the manufacture of metallurgical coke from splint coals and anthracites.

Heretofore, the results obtained with these coals in the ordinary ovens have been very unsatisfactory. It is true that coke has been made containing from 20 to 25 per cent of anthracite, but the remainder had to be of good coking coals. Now, the Bauer ovens permit the use of from 75 to 80 per cent of anthracite, with from 20 to 25 per cent of coking coal. The experiments made in Austria, Germany, and France all go to prove thoroughly the truth of the inventor's claims, and a large number of ovens of this system are now used in different parts of Europe. The Creusot Steel-Works are now erecting 40 of these ovens, after having experimented with a couple of them for some time past. They do not propose to use more than 55 per cent of anthracite and 45 per cent of soft coal.

The trial tests at Creusot were made with 50 per cent of anthracite and 50 per cent of bituminous coal from Saint-Etienne. The total of 100 charges represented 364,710 pounds, which yielded 269,386 pounds of coke. If we take into account and deduct the amount of water that the washed coal contained, the product in coke represents 75 per cent of the charge, in addition to the braise, which amounted to 5·75 per cent.

The cost of making this coke was as follows, deductions made for moisture:

175,060 pounds Saint Etienne at $4	$350.12
175,060 pounds anthracite at $1.20	105.03
	$455.15
Deduct from this the market value of the braise	17.29
	$437.86
The coke produced was 134·5 tons. The value of material used per ton, therefore, was	$3.26
The labor per ton was found to be	.19
The general expenses per ton	.10
The total cost per ton	$3.55

HALL'S NEW GAS AND COKE KILN.

Quite a novelty in the way of a gas and coke kiln has lately been invented and patented by Mr. Hayden H. Hall, of New Hamburg, New York. By this method, it is proposed to practically make a continuous working coke-oven, from which all the gases evolved and all the valuable products of combustion are withdrawn separately, and in which every detail of the manufacture is under perfect control. The accompanying cuts, and the following details taken from the patent specifications, will explain the whole *modus operandi*:

The apparatus consists of a kiln, open at the top, for charging and lighting, and provided with a blast or exhaust-pipe or flue traversing it at the floor, or rather grate, of the upper chamber, another chamber being provided below the charging-chamber, into which each charge of finished coke is dropped through the tilting-grate, as shown. The blast or exhaust-pipe is constructed in pyramidal cross-section, and fitted with upper and lower rows of exhaust opening, each controlled by independent dampers, and protected by overhanging hoods from the drip of the tar formed during combustion. The exhaust-pipe has a valve at the discharge end, and is fitted with a movable head at the opposite end, having telescopic connection with the valved outlet of a blowing-engine or exhauster. By this means, the gases are conveyed into suitable gas-receivers. The charging-chamber is provided with pipes, by means of which superheated steam is forced into the charge during the gas-generating period. This not only increases the downward draught (the kiln being fired from the top), but also produces hydrogen gas, which, mingling with the coal gases, tends to intensify their heating effect.

COAL AND COKE IN TENNESSEE.

The Chattanooga *Tradesman* gives the following abstract of the report of Joseph C. Guild, of Chattanooga, the State Inspector of Mines:

The demand for the Tennessee domestic coals has this winter shown a great increase over last year, and all the mining companies seem to be in a most prosperous condition. In most cases, they are increasing their output to the extreme limit. Better prices are paid for this class of coal, and the mines are generally in a more prosperous condition than they have been for some years. I am glad to report that the number of companies mining this class of coal has materially increased.

The new companies are as follows: McNab Coal Company, reopened, fifteen miles below Chattanooga, on the Tennessee River.

Laurel Leaf Coal Company, at Oliver's Springs, Anderson County, Tenn.

Helenwood Coal Company, reopened, Helenwood, Tenn.; James Frye, Manager.

Robbins Coal and Mining Company, Robbins, Tenn., co-operative plan.

Two small new mines on the property of Col. J. M. Hicks, at Coal Creek; opened by miners on the co-operative plan.

The increase in the price of iron has caused an increased demand for Tennessee blast-furnace coke; and in fact, now the demand is far greater than the supply.

The new mines now opening and to be opened in the near future to produce coking coal are:

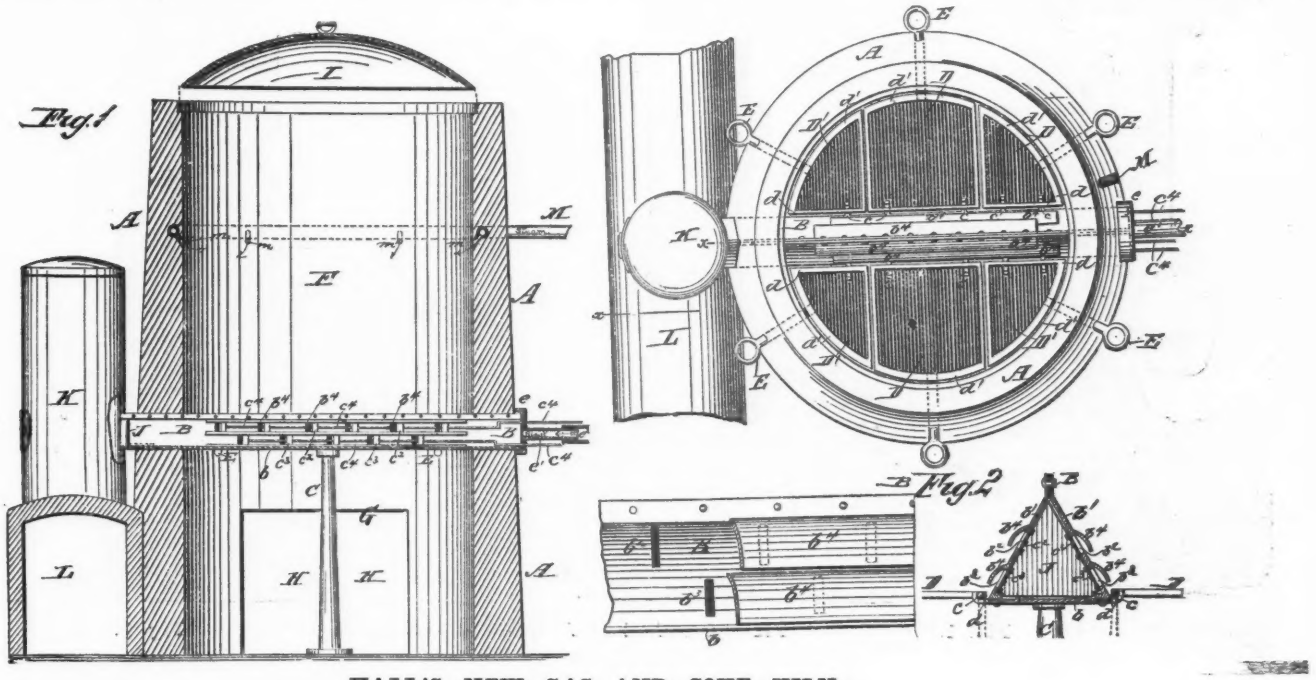
A new mine by the Ætna Coal and Coke Company, three miles from its present mine, to which a railroad has been built, and it will in a short time greatly increase its output of splendid blacksmith coal and unexcelled foundry coke.

The Thomas mine, in the Sequatchie Valley, four miles from Victoria, where the Tennessee Coal, Iron, and Railroad Company will mine coal to manufacture coke for its iron plant at South Pittsburg, to which it will add another furnace. The coke-ovens will be near the furnaces.

The Sequatchie Coal and Iron Company will open a mine thirteen miles from Victoria, and go into active operations in the spring.

It is also said that the extensive coal-fields four miles from McMinnville are to be opened at an early period.

Thus we see that the new mines now in operation, or soon to be ope-



HALL'S NEW GAS AND COKE KILN.

rated, are eleven in number, an increase of 33⅓ per cent, which is, in our opinion, a very flattering result.

Altogether, the coal trade of Tennessee is in a far more flattering condition than it ever was before.

The increased demand for furnace coke has caused experiments to be made at several of the mines whose coals have been previously considered unfit for the manufacture of coke, and with varying success.

The Standard Coal and Coke Company has met with considerable success in this line, and has produced a very good coke, but has not yet succeeded in making it of sufficient strength to bear the burden in a blast-furnace.

The Glen Mary Coke and Coal Company is producing a good coke, and selling to the Dayton Iron Company, and also ships regularly to California for silver smelting purposes.

It is only a question of time, and the immense quantities of slack coal now wasted at the mines that produce our domestic coal will be utilized in this way. Coal and coke of Tennessee production now find a market as far South as Texas, and as far West as California.

Not mentioned by Mr. Guild is the contemplated improvement of the Soddy Coal Company of this city, in order to supply the demand for coke that will follow the erection of one if not two new blast-furnaces in this city. The contract is already made with the new company, which will shortly break ground for its plant, and it is understood that it will get the contract with the other, which it is believed will be erected at no distant day. The Soddy Company is one of the most prosperous concerns in the State, and its coke is splendidly adapted to blast-furnace purposes.

The Sale Creek mines, on the Cincinnati Southern Railroad, have fifty large coke-ovens in full blast, and more building. It contemplates making extensive improvements at Soddy, and is now putting in a tail rope system.

MANGANESE MINING IN MERIONETHSHIRE, ENGLAND.*

By C. Le Neve Foster, D.Sc.

Manganese ore is now worked in the Cambrian rocks at several places near Barmouth and Harlech. It occurs in the form of a bed varying from a few inches to 4 feet in thickness; the average thickness is from 18 inches to 2 feet. The undecomposed ore contains the manganese in the form of carbonate, with a small proportion of silicate; but at the outcrop it is changed into a hydrated black oxide. Some of the outcrops of the manganese bed are erroneously marked on the geological survey maps as mineral veins, though Sir Andrew Ramsay was of opinion that the deposits were not true lodes. Recent workings show plainly that the deposits are truly stratified beds, or possibly various outcrops of one and the same bed, extending over a considerable area.

The ore contains from 20 to 35 per cent of metallic manganese, and is dispatched to Flintshire and Lancashire for the manufacture of ferromanganese. The new Merionethshire mines are the first instance of workings for carbonate of manganese in the British Isles. The output of the mines of the Dyffryn Company approaches 1400 tons of ore a month.

* Abstract of a paper read before the British Association Meeting, Birmingham, September, 1886.

THE CASTLE AUTOMATIC ENGINE.

Any invention that tends to lessen the parts and simplify the construction of small engines is always a move in the right direction, provided it is accompanied with good workmanship and an economical distribution of steam. The Castle automatic engine, which we illustrate, seems, from the reports we have of it, to combine most of these features, is capable of running at very high speeds, and is practically noiseless.

Fig. 1 represents the combined engine and boiler on a very unique cast-iron base, arranged so that all leakage from the boiler and from other sources is caught in the grooved channel around the bottom of the base, and led to any point desired, making it a very neat arrangement for such purposes. Fig. 2 represents the sectional view of the Castle engine, giving the internal view of parts. The engine has a vertical cylinder, with a trunk piston acting one way. The oscillation of the piston that acts as the valve to open and close the ports to admit the steam is given by the angularity or divergence of the crank from the axial line of the shaft. This peculiarity or angle of the crank does away with the valves, eccentric, and steam-chest as ordinarily used, and reduces the number of parts to the fewest possible. This motion, combined with the reciprocating movement produced by the crank proper, constitutes a novel and simple mechanism for obtaining the proper distribution of steam and power. Another feature of great importance is the method of connecting the crank-boxes with the wrist-pin box by what constitutes universal joints at each end of the connecting-rod, thus permitting the full contact of bearing surfaces at all times, without the possibility of binding. A quiet, easy, and noiseless movement at high speeds is thus obtained. The lost motion is taken up by the parts themselves, from the pressure being constant in one direction only. The bearing surfaces provided in this engine are very large. In the five horse-power engine, the crank-pin is equal in length to the diameter of the cylinder, and in size is one third the diameter of the cylinder. Thus, the dimensions for the five horse-power crank-pin are 5 inches long by 1⅝ inches diameter, and the main bearings are 5½ inches long by 2 inches diameter. The best gun-metal linings and genuine Babbitt-metal are used, insuring durability. The lubrication of all parts is positive and thorough, there being a constant circulation of oil and water through the main bearings, while the crank and boxes revolve in a bath of oil that splashes the lubricant upon all the parts of the cylinder and wrist-pin joints. The packing-rings prevent the steam from entering the oil-case, and the stuffing-boxes, as shown on the main bearings, simply hold the oil within the case. By this arrangement, the oil is distributed very efficiently. The steam is cut off at from one third to one half of its stroke, having the full benefit of expansion, and the exhaust takes place at the end of the stroke by the uncover-

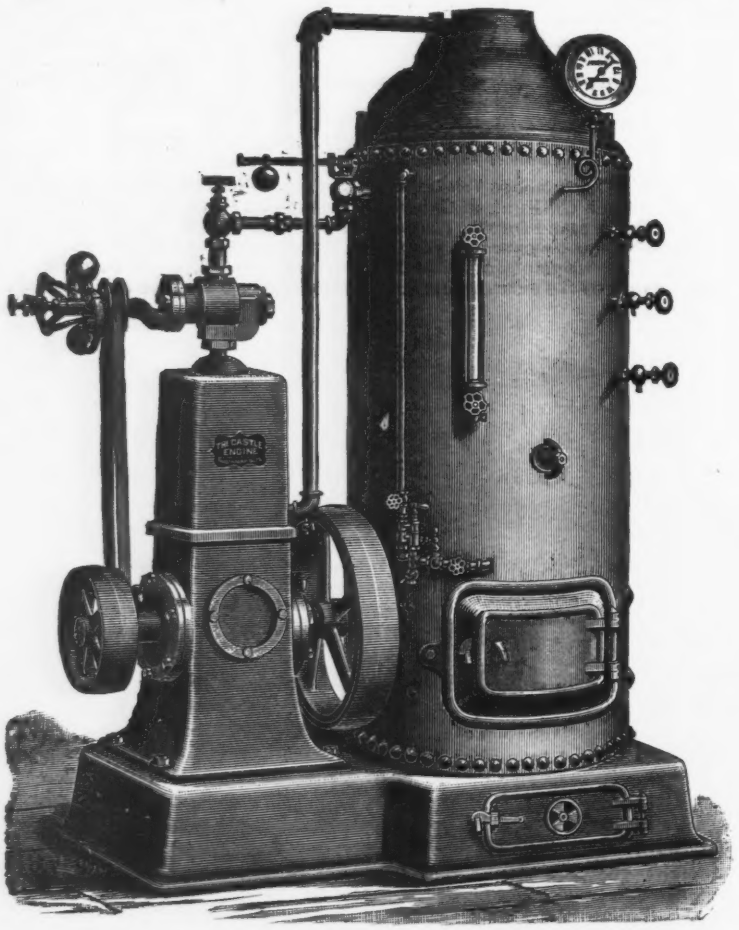


Fig. 1.

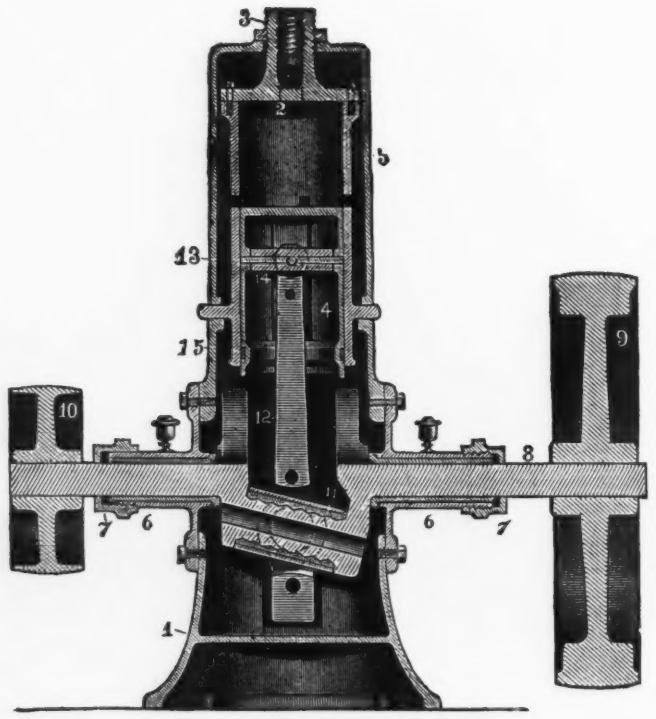


Fig. 2.

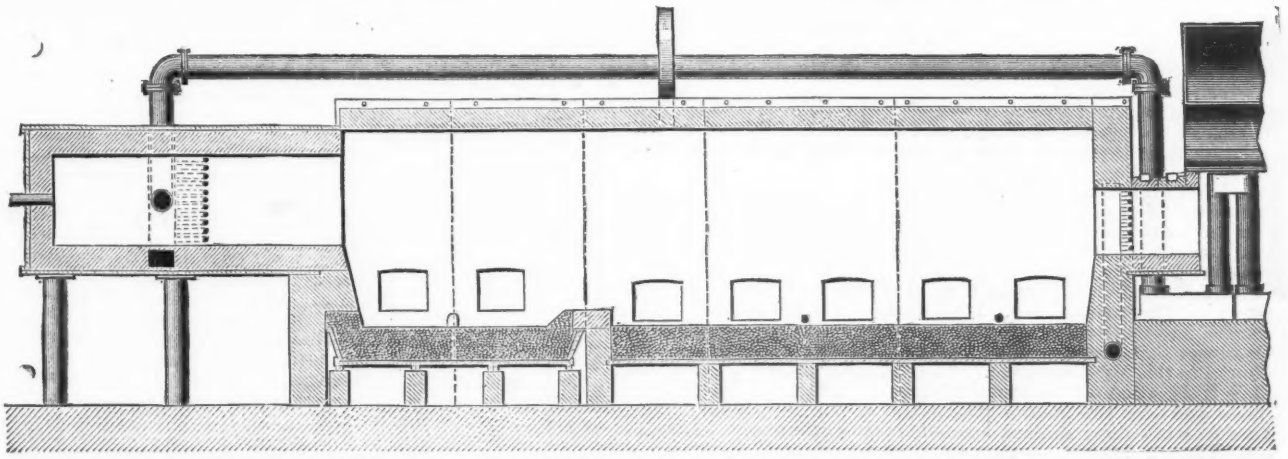
THE CASTLE AUTOMATIC ENGINE.

ing of annular ports around the cylinder; and owing to the high speeds maintained, condensation in the cylinder is reduced to a very low point.

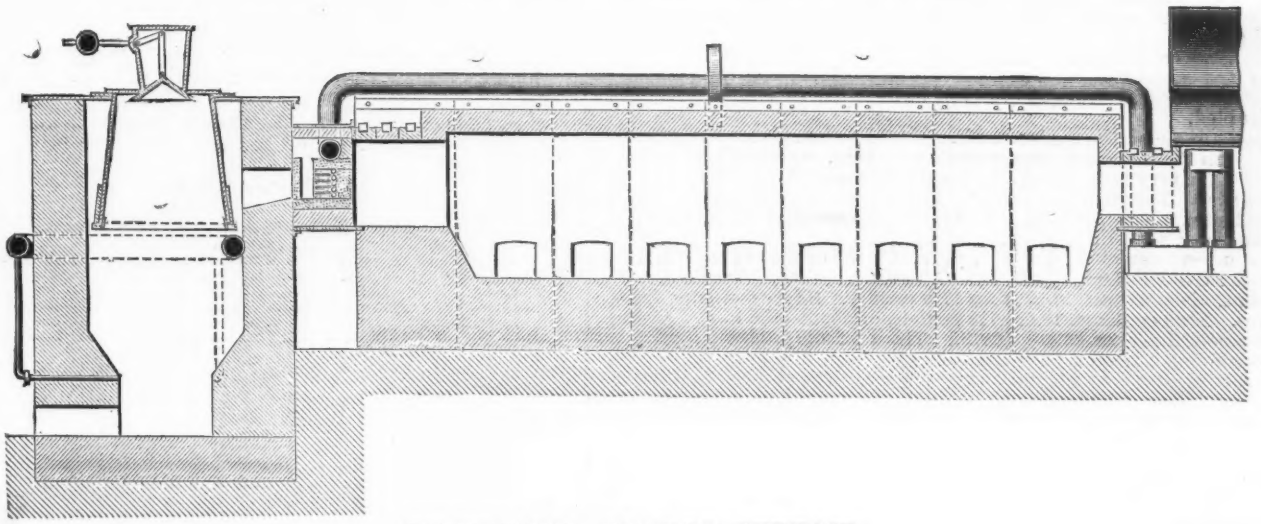
This engine uses all of its steam in one stroke, and gets the full benefit of expansion, high speed contributing to economy at the same time. When the steam is exhausted, it carries with it all the water of condensation. A sheet-iron jacket protects the outer walls of the cylinder from direct contact with the exhaust steam collected in the steam-jacket. From this chamber, the exhaust steam is led by a pipe to any point desired. Any approved automatic sight-feed lubricator may be used for oiling the cylinder and piston. The wear of the piston is reduced to a minimum, because of its vertical position, and the large surfaces exposed by a trunk piston.

As a result of this construction, one of these engines, after being run nearly 28,000,000 revolutions, was taken apart and examined, when the surfaces were found to be very highly polished, and the wear was not perceptible. In the cut, a single-acting cylinder only is shown. These engines can be made with two or three cylinders. We are informed that a three-cylinder engine of this type has been run 3000 revolutions a minute, and has but 22 moving parts, with a reversing arrangement consisting of a three-way valve. These engines are well adapted for yachts, boats, electric lighting, and domestic purposes generally. Owing to their lightness of parts, they can be economically carried into mining districts, and wherever steam-power is required. There are no joints to pack against live steam pressures; therefore no steam can leak through to the outside. This permits these engines to be placed in offices or stores with no fear of annoyance from this cause. For the present, these engines are made from 2 to 10 horse-power, with the single cylinders; but patterns are making for larger sizes.

This system has been patented in this and most foreign countries. For further information on the subject, we would refer to the Castle Engine-Works, the manufacturers, whose address will be found in our advertising columns.



HENDERSON'S STEEL CONVERTING FURNACE FOR NATURAL GAS.



HENDERSON'S HEATING FURNACE.

THE HENDERSON GAS-FURNACES.

The accompanying drawings show James Henderson's improved furnaces for heating and making iron and steel. The first is a modification of his furnace patented November 14th, 1882, in which bituminous coal is charged through a hopper and converted into gas by burning with a measured quantity of air supplied by a positive blower, which thus regulates the amount of fuel used. The required amount of air for its perfect combustion may be measured in a similar apparatus and heated in iron pipes, shown under the boiler at the end of the furnace and thence conveyed by the iron pipe above the furnace to the neck of the furnace, where it is introduced at perhaps 1000 degrees Fahr., to burn the combustible gases. The gas produced, it is estimated, will not use more than 224 pounds of coal per hour.

The furnace hearth is 20 feet long and 6 feet wide, and is estimated to heat a charge of iron piles in one hour using 2 cwt. of coal. The chamber is made deeper and higher than the usual furnace chambers, so that the article is heated by the radiated heat of the flame as it passes through the furnace.

It is thus sought in this furnace to utilize a greater proportion of the heat than is done in the ordinary furnace, where from 1000 to 1800 pounds of coal are required per ton of iron heated, and to reduce nearly to zero the loss of iron from oxidization, which is usually from 5 to 10 per cent.

Where natural gas is cheap, the arrangements shown below may be used. Two hearths are shown, but in practice three might be used; placing one for heating ingots between the second hearth and the boiler. Then it is claimed that one furnace will make the iron from the ore, convert it into steel, heat the ingots for rolling, and generate the steam for all uses at the works. The natural gas and air for its combustion would be supplied in measured volumes as already described, the air being heated by the waste gases and thoroughly mixed with the fuel gas. A third hearth may be used in this furnace also.

It is claimed that the loss of iron by oxidation is reduced to a minimum, and that the ore can be reduced to sponge by mixing 6 cwt. of coal to a ton of ore. Coal and ore are pulverized and mixed with a little lime, to remove sulphur and silica, and the whole made into a mortar in a pug-mill with glucose and water, and molded into blocks of convenient size, say 4½ inches square by 12 inches long, and dried. These are placed, four to a square foot of the hearth area, end upward, and in an hour are reduced by the carbon to iron sponge, and may be transferred by bars to the first hearth, where they are melted with from 4 to 5 per cent of spiegeleisen and made into soft steel, which is cast or poured from the hearth into ingots; or the whole hearth may be used for sponge, which may be removed with a tongs to a buggy arranged to lie on the anvil while two or three blows of a hammer solidify it, the buggy then being removed and the bloom finished. The furnace shown has a deoxidizing hearth 6 feet by 12 feet, and melting hearth 7 by 6 feet, and it is claimed by the inventor that it will make 5000 pounds every 2½ hours, or, say, 30 tons of blooms, or 20 tons of soft steel in twenty-four hours. The coal gas given off from the ore process is estimated at 28,000 cubic feet of carbonic oxide. It is burned by air introduced into the outlet neck, and heats the iron or steel in an adjoining chamber: the escaping heat will generate steam for the engines. It is claimed that 3 cwt. of coal in the gas-producer (or its equivalent of natural gas) and 9 cwt. in the deoxidizing chamber will convert ore to soft steel.

The cost of pulverizing and mixing and making blocks is estimated at

$1.50 per ton of steel; labor, $1.25; refractories, repairs, and expenses, $1; say $3.75 per ton above cost of ore, or less for an iron bloom than pig-iron would cost from the same ore.

We confess these estimates appear to us "ideal," rather than what may be realized in ordinary running.

Mr. Henderson estimates that a triple hearth natural gas furnace, to make 20 tons of soft steel a day, will cost $4500, exclusive of boilers, ladles, ingot molds, crane, crushing and grinding machinery; but every other appurtenance of the furnace included.

The hearth of the steel melting chamber would be of lime, the deoxidizing chamber of chrome iron ore, and the heating chamber of sand. The lime and ore-hearths are made by patented processes invented by Mr. Henderson.

The triple hearth gas furnace, Mr. Henderson says, is designed to enable those having puddling plant to use their machinery for manufacturing iron so economically that they will always be able to hold their ground in competition with the colossal steel companies having monster blast-furnaces and steel plants.

OFFICIAL STATEMENTS AND REPORTS.

Adams Mining Company, Colorado.

The annual stockholders' meeting of the Adams Silver Mining Company was held at the company's office in Leadville, on November 26th. The capitalization of the company is 150,000 shares, of which 136,000 shares were represented.

The following Board of Directors was elected: John J. Adams, William H. Gelshenen, Shepherd Knapp, and Arthur D. Williams, of New York; James J. Sylvester, St. Louis; Charles Donnelly, Denver; Hon. T. B. Ryan, Leadville.

At the close of the election, Mr. Samuel Adams, manager of the property, submitted his annual report, proving a very gratifying exhibit. The report recites the development of the second contact during the past year, and calls attention to the great increase in the resources of the mine. The lower ore-body, as far as opened, shows from 9 to 12 feet of galena or sulphide ore, which assays from 6 to 50 ounces in silver to the ton, and from 8 to 70 per cent in lead. Drifting on the sulphide ore-body has fairly begun, and will advance as rapidly as practical. It is the opinion of the manager that, in prosecuting work, oxidized or carbonate ore will yet be found in this lower ore zone. The Adams shaft, on the northern or Yankee Hill portion of the company's property, has attained a depth of 575 feet, and near the bottom passed through a fair streak of ore, while the last work done showed sporadic masses of mineral. The discovery-shaft is still sinking, but the contact is not yet reached.

The Clontarf shaft has a depth of 587 feet, having been sunk seventy feet during the year. A south drift is driving from the Brookland shaft toward the Clontarf, which is already affecting the water in the latter, and is expected soon to drain it sufficiently to permit the resumption of sinking.

The large ore-body to the northward of the Brookland shaft present as large and unbroken face, and gives every evidence of a continuance. The ore-chute is as strong as ever, and its indefinite extension can scarcely be doubted.

The estimate of the engineer, Mr. Alfred Thielen, places the resources in sight in the mine on the upper contact or vein, at from 25,000 to 30,000 tons, with a very large area to be opened that will very likely be found productive. There is also an almost inexhaustible quantity of low-grade ore, adapted to concentration. For the utilization of this ore, it is suggested that a concentrating mill be erected.

The ore-shipments of the past year and the contents are reported as follows: Gross weight, 16,328 tons 1870 pounds. Average moisture, 8·15 per cent. Net weight, 14,971 tons 1720 pounds. Silver contents, 250,508 ounces. Lead contents, 10,675,713 pounds, or about 5338 tons. Average price received per ton of ore, $28.27. The cost of production per gross ton, including all expenses, was $10.47.

Deducting the cost of development-work, with the expenses of the New York office, which together amounted to $40,000, the cost of mining is reduced to $8 a ton, which is very fair, considering the quantity of water handled daily, and other expenses incidental to this property.

The decreased price of silver during the year has resulted in a difference or loss to the company of $20,000, or an average of $1.34 per net ton. The average price of silver last year was $1.06 an ounce, against 98 cents this year.

The expense of the year (embracing every thing) was 40 per cent of the receipts, and the profits 60 per cent. The total net profits of the year reached the gratifying sum of $253,632.39.

The ore shipped averaged 16·73 ounces in silver to the ton, 35·7 per cent in lead.

The receipts of the company from all sources were as follows:

Proceeds of ore sales	$423,357.55
Dividends First National Bank	375.15
Interest Farmers' Loan and Trust Company	303.08
Balance on hand last year	36,700.77
Total	$460,736.65

The disbursements of the year are as follows:

Expenses for labor and material, office and general expenses	$171,003.39
Dividends	247,500.00
Balance in treasury	42,233.16
Total	$460,736.55

In addition to the above, there is $7000 worth of ore at the smelter awaiting settlement.

Colorado Central Consolidated Mining Company, Colorado.

This company has just issued its seventh annual report, which is even more encouraging than was generally expected, considering the decline during the past year in the price of silver. It shows what can be accomplished by capable and honest management, even in the face of adverse circumstances.

The president, Mr. Paul Lichtenstein, in his report, says:

"At the close of the seventh year of the existence of your company, it becomes an agreeable duty to me to make you acquainted with the result of working your mines during the last twelve months, and the present condition of your property.

"Almost entirely unmolested by the only too frequent lawsuits of former years, your superintendent was enabled to devote his entire time to the development of your property and the extraction of its treasures. Although the total amount of precious metal extracted was only 1263 tons, as against 1391 during the previous year, its grade has considerably improved, having risen from 202 ounces per ton to 260 ounces per ton, an increase in value of nearly 28¼ per cent, thus showing clearly that, if any thing, the quality of the ore is improving by the gaining of depth. Unfortunately, owing to the continued heavy decline in the price of silver during the summer—silver having been quoted as low as 91 cents an ounce—the company has not derived the full benefit of the higher grade of ore. While last year, when silver had already considerably declined, the average net price per ton of 202 ounces obtained was $176.66, or equal to 87·455 cents an ounce, this year the average net value realized out of a ton of 260 ounces was only $225.77, or equal to 86·835 cents an ounce.

"In accordance with the policy outlined at the last annual meeting, your board of directors has allowed the reserve fund to reach the sum of $100,000, and after paying Mr. George W. Hall's old claim of $10,000, as authorized at the last annual meeting, erecting new plant, including a powerful air-compressor, and paying seven dividends amounting to $98,750, there remains in the hands of the treasurer (including the reserve fund) the sum of $118,414.44."

We think, with the president, that the stockholders have good reason to congratulate themselves on the state of affairs of the company.

From the superintendent's report, we learn that the development-work for the year was less than that for 1885; but the number of fathoms opened is more than double the number of fathoms stoped during the year, which latter amounted to 1184½ fathoms, as against 6493 fathoms for the year previous.

No figures are given as to the average width of the vein; but it is evident, from the above, that the amount of ore in the vein must have increased very materially, as, with one sixth the number of fathoms stoped, only 123 tons less ore were extracted than in 1885.

The ore sold was 1261·8 tons. The report should have stated that this is not the dry ore tons, of which the average price received is stated to have been $225.77 a ton. This explanation is necessary, and should have been stated in the report, to prevent misconception.

We should have liked to see some further information than the superintendent's report gives concerning the cost of mining and dead-work; for without the explanation, the general figure of about $164 cost per ton of ore sold may appear extravagant, when the total length of drifts, cross-cuts, and winzes mentioned in the report is 1372 feet, and 1184½ fathoms stoped.

The following figures will show the amount of the receipts and expenditures for the year:

RECEIPTS

Ore sold, 1261·8 tons, yielding	$279,173.20
Supplies, etc., sold	3,192.35
Company's interest in leases	72,982.49
	$355,348.04
Balance in New York, November 1st, 1885 (about)	85,000.00
Miscellaneous receipts, New York (about)	3,467.66
	$443,815.70

EXPENDITURES.

Mines.

Paid lessees	$125,356.58
Paid labor	50,660.11
Building and improvement account	10,212.84
Supplies	8,446.70
Wood, timber, and lumber	3,333.23
Salaries and office expenses	10,208.40
Law expenses	763.85
Old claims of G. W. Hall	10,000.00
	$218,981.71

New York.

Printing	67.45
Office expenses	1,546.28
Salaries	4,200.00
Miscellaneous	860.50
Dividends	98,750.00
Legal expenses	428.51
	$106,455.74
Cash on hand, November 11th, 1886	118,414.44

The amount of cash on hand at the close of the previous year we find, by referring to our review of a year ago, was about $85,000; and on November 11th, 1886, the balance amounted to $118,414.44, in which some $57,000 of United States bonds are counted at the present market quotation, and not, as we think they should be, at their cost, which we understand was somewhat less than present value.

In the above tabulation, we do not make a complete balance-sheet, the accounts not being kept in a convenient form to readily do so.

The moderate amount of expenses and salaries shows that the company is managed with strict economy.

When a company is managed honestly and with ability, as this is, we believe it should set an example in the fullness of information it gives, and not take it for granted that *reputation* is a fair substitute for *information* concerning the very basis of the value of the property, its ore-reserves.

PATENTS GRANTED BY THE UNITED STATES PATENT-OFFICE.

GRANTED DECEMBER 7TH, 1886.

353,689. Furnace-Grate. Henry Lencke, Reading, Pa.
353,727. Ore-Feeder. George E. Woodbury, San Francisco, Cal.
353,747. Regenerative Hot-Blast Stove. John M. Hartman, Philadelphia, Pa.
353,825. Manufacture of Phosphates from Slags. Carl Scheibler, Berlin, Germany.
353,843. Air-Mixer for Gas. James L. Brown, Brookville, Pa.
353,981. Covering for Pipes, Boilers, etc. Herbert M. Small, Baldwinsville, Mass.
354,017. Gas-Regulator. J. Henry Helm, Allegheny, Pa.
354,067. Apparatus for Mixing Air and Gas and Delivering the Mixture to Carburetors. Robert S. Lawrence, Washington, D. C.
354,069. Machine for Making Twist-Drills. Samuel Moore, Providence, R. I., Assignor to Sullivan Fenner, same place.

PERSONALS.

Prof. H. S. Monroe, of Columbia College, leaves to-day for Missouri, on professional business, examining mines.

Mr. R. N. Clarke, General Manager of the Chrysolite Silver Mining Company for several years, has resigned his position, but will act as consulting engineer to the company.

Mr. George W. Maynard, M.E., will leave on the 23d inst., in company with Mr. George W. Roberts, to examine the mines of the El Cristo gold and silver mining companies, State of Tolima, United States of Colombia.

Mr. de la Bouglise has returned from an extended trip in the West, on his way to Paris, and reports favorably on the work doing at the several mines with which he is connected, including the Golden River, Lexington, and Boleo.

FURNACE, MILL, AND FACTORY.

The Cincinnati & Newport Iron Pipe Works in Newport, Ky., were damaged by fire on the 11th inst.

E. D. Wassels, of Pittsburg, Pa., is arranging for a test at the Atlantic Iron-Works, Sharon, Pa., of a new process of welding and rolling steel from old rails by which the cost is cheapened $10 a ton.

The Pittsburg Forge and Iron Company, Pittsburg, Pa., has successfully introduced a machine for making coupling-pins for railroad cars. It makes 15,000 a day, while the old machine only made 1000 a day.

The Eagle Rolling-Mill in the West End, Pittsburg, Pa., is undergoing extensive repairs preparatory to resuming operations. It has been idle for nearly three years.

Three of the four furnaces of the Cleveland Rolling-Mill Company, Cleveland, Ohio, are shut down because coke can not be obtained to run them, owing to lack of cars, and coal is too expensive.

The La Grange Furnace Company has been organized at Nashville, Tenn., for the manufacture of pig-iron and the development of coal mines in Stewart County. It will erect several furnaces, foundry, and machine-shops.

A syndicate of Atlanta and Richmond capitalists has just been formed for the erection of two 150-ton iron furnaces at Oxanna, in the center of the Alabama coal and iron regions, on the crossing of the Georgia Pacific and East Tennessee roads, adjoining Anniston.

Carnegie, Phipps & Co. are about to erect a new 80-inch blowing-engine at their steel-works, at Homestead, Pa., in place of the two small engines now in use. The old engines have blown over 800,000 tons of steel, but, owing to an increase in the output from 7000 to 13,000 tons a year, they are now too small.

It is proposed to consolidate the Pittsburg Hinge and Chain Works, Beaver Falls, Pa., in which Oliver Brothers & Phillips, of Pittsburg, are the principal owners, with the Baker Wagon Factory Works, of Westville, Ohio, by removing the latter plant to Beaver Falls. The new concern will be known under the name of the Baker Wagon Iron Company.

The Bethlehem Iron Company, Bethlehem, Pa., is erecting a steel plate and shafting mill, which will be ready for occupancy in the early part of 1887. No Bessemer steel will be used in the building, all the work being from the open-hearth steel. The company intends to manufacture steel armor plate, and has its eye on ordnance work, especially on the heavy steel forgings required by the United States government.

We learn from the Brown Hoisting and Conveying Company, of Cleveland, Ohio, that letters of inquiry referring to the ENGINEERING AND MINING JOURNAL were recently received from parties in Japan, and from Durban, Natal, South Africa; also one from Valparaiso, Chili; all of which shows the wide circulation of the ENGINEERING AND MINING JOURNAL, and the benefit it brings to its advertisers.

Furnace F, of the Edgar Thomson Steel-Works, on the last Monday of November made the unparalleled run of 354 gross tons. During the week ended November 27th, the same furnace made 1872½ tons of iron from ore yielding 63·7 per cent metallic iron, with an average consumption of 1896 pounds of coke per gross ton of iron. This is the furnace completed a few weeks ago. Its bosh has a diameter of 20 feet.

The Brown Hoisting and Conveying Machine Company, of Cleveland, Ohio, is erecting new works in the eastern part of that city, convenient to the railroad, and provided with every facility for cheap work. This company has recently completed the plant, consisting of nine bridge tramways, with hoisting machinery, at Fairport, Ohio, and is erecting its patent incline and automatic dumping hoist for the Claire furnace, at Sharpsville, Pa., and also one for the Rosina furnace, at New Castle, Pa.

The Standard Charcoal Iron and Chemical Company has been organized at Nashville, Tenn., with a capital stock of $5,000,000, to manufacture and sell wood, alcohol, acetate of lime, iron, and steel. It has purchased all rights of the patents issued to Dr. H. M. Pierce, and also his interest in the various manufactories of this character already established at Goodrich, Tenn.; Calera, and Decatur, Ala.; and Elk Rapids, Mich. The company will start other manufactories and sell the right to manufacture these articles by the Pierce process. The principal office will be at Nashville.

The firms of Moorhead, McCleane & Co., of the Soho Iron and Steel-Works, Moorhead & Co., of the Soho blast-furnaces, and the Pittsburg Tube Company, Pittsburg, Pa., will be consolidated January 1st, under the name of the Moorhead Manufacturing Company. The capital stock will be about $2,000,000. The new company will operate the works in connection with the Keystone rolling-mill, which is mainly controlled by the Moorheads. Under this arrangement, the iron made at the Soho furnaces will be taken directly to the iron or steel rolling-mills and thence to the other works, to be made into tubes, rails, or plates.

BIDS ON CONTRACTS.

DREDGING.—Capt. W. H. Bixby, U. S. Engineers, Wilmington, N. C., has received the following bids for dredging in New River, N. C.: Charles H. Lewis, Baltimore, Md., 38c. per cubic yard; Rittenhouse Moore, Mobile, Ala., 28½c. per cubic yard, 23¾c. per cubic yard if awarded the two other contracts for Bogue Sound and Club Foot and Harlowe Creeks; R. P. Bowdoin, Wilmington, N. C., 29c. per cubic yard. In Bogue Sound, Charles H. Lewis, 35c. per cubic yard; Rintenhouse Moore, 32½c. per cubic yard, or 27¾c. if awarded the other two mentioned above and below; R. P. Bowdoin, 33c. per cubic yard. In Club Foot and Harlowe Creeks, Charles H. Lewis, 25c. per cubic yard; Rittenhouse Moore, 33c. per cubic yard, or 27c. if awarded the other two mentioned above; R. P. Bowdoin, 38c. per cubic yard. Mr. Lewis will deduct 5c. per cubic yard from the above prices for each work, if awarded all three works.

DREDGING.—Col. G. L. Gillespie, U. S. Engineers, Boston, Mass., has received the following bids for dredging about 60,000 cubic yards of material: New England Dredging Company, 12 P.O. Square, Boston, 19½c. per cubic yard, measured in scows; Bay State Dredging Company, 76 High street, Boston, 15c.; Boynton Brothers, 35 Congress street, Boston, 19½c.

DREDGING.—Major Jared A. Smith, U. S. Engineers, Portland, Me., has received the following bids for dredging in York Harbor, Me.: First location, 15,852 cubic yards; second location, 4059 cubic yards. The prices were the same in each case, namely: Hamilton & Sawyer, Chebeague, Me., 79½c.; Moore & Wright, Portland, Me., 67c.; Thomas Symonds, Leominster, Mass., 65c. All per cubic yard *in situ*.

PUMPING-ENGINES, ETC.—The Water-Works Trustees, Franklin, Ohio, received the following bids for two compound non condensing duplex pumps (each 750,000 gallons capacity daily), including two pumps, two steel boilers, two feed-pumps, feed-water heater, boiler settings, chimney, and all the pipes and trimmings complete: The Holly Manufacturing Company, Lockport, N. Y., $6200, with Otis steel boilers; the Smith & Vaile Company, Dayton, O., $6330, with Park Brothers steel boilers, $6455 with Otis steel boilers; the Gordon & Maxwell Company, Hamilton, O., $6500, steel in boilers not named; George C. Morgan, Chicago, $8546, steel in boilers not named; National Iron and Brass Works, Dubuque, Iowa, $7500, Otis, Park Brothers, or Cleveland Rolling-Mill Company steel at option of trustees.

PUMPING-ENGINES.—The Water-Works Trustees, Youngstown, Ohio, have received the following bids for pumping engines. Each bid was for two high and two low-pressure cylinders, and two plunger pumps of 22½ inches diameter by 36 inches stroke: George F. Blake Manufacturing Company (2 high-pressure cylinders 21-inch, 2 low-pressure 40-inch diameter) $17,660; H. R. Worthington (high-pressure 21-inch, low-pressure 36⅝-inch diameter), $15,900; Deane Steam-Pump Company (high-pressure 24 inch. low-pressure 44-inch diameter), $13,980; Gordon & Maxwell Company (high-pressure 26-inch, low-pressure 46-inch diameter), $15,000; Wilson & Synder Company (high-pressure 24-inch, low-pressure 44-inch diameter), $15,200; Holly Manufacturing Company (high-pressure 26-inch, low-pressure 45-inch diameter), $17,500.

LABOR AND WAGES.

It is feared that there may be a strike in the Connellsville coke region, Pennsylvania, after all. The Knights of Labor have at last consented to co-operate with the Miners and Mine Laborers' Amalgamated Association in the enforcement of the latter's demands on the coke operators, to take effect on December 25th.

All the leading coal mines in the vicinity of Youngstown, Ohio, are idle, with little prospect of a settlement, the men coming out because of the operators refusing to concede an advance of ten cents a ton in accordance with the decision reached at the Miners' Convention held at Youngstown last week.

The twenty-four coal miners convicted of riot and conspiracy for addressing meetings in the fourth pool during the great strike of the river miners in 1885, in Pennsylvania, and sentenced to six months' imprisonment, gave themselves up on the 13th inst, in Pittsburg, and were sent to the workhouse. A strong effort is making to have them pardoned.

The striking miners at the Bear Valley Colliery, operated by the Philadelphia & Reading Railroad, at Shamokin, Pa., resumed work on the 14th inst. The local assembly, Knights of Labor, disapproved the strike and ordered the men to return to work. The strike was in consequence of a reduction of 10 per cent in the wages of miners working certain veins.

A call has been issued for a general convention of spring and axle workers of the United States, to be held in Pittsburg, Pa., on January 4th. The object of the convention is to establish uniform wages throughout the country, taking the highest paid as a standard, and to complete arrangements for disbanding their national organization prior to going into the Knights of Labor in a body.

The rate of wages to be paid steel workers throughout the country is receiving serious consideration at Pittsburg, Pa. The new scale goes into effect on January 1st, and as the rate adopted at the vast mills of Carnegie & Co., at Braddock, Pa., will have its bearing on numerous other mills, great interest is manifested. It is stated that the employés at Braddock, who are Knights of Labor, will demand a general advance, ranging from 10 to 20 per cent, but that no trouble in the settlement of the question is anticipated, as an arbitration committee, with power to act, has already been appointed.

COAL TRADE NOTES.

The Knights of Labor State Executive Board, which has been in session in Chicago this week, has considered measures against the coal monopolists in Chicago and perhaps other neighboring cities. Agents of the order have circulated a paper among the commercial and manufacturing men here, by which the signers agree to buy coal of the Knights, provided the latter furnish it at rates from $1 to $1.50 a ton under those made by the coal ring. This document has been signed by about 600 of the leading consumers of the city. The Knights are relying upon co-operative shafts at Cannelburg, Ind., and in St. Clair County, Ill., purchased by the General Executive Board of the Knights last year. The capacity of these mines is 30,000 tons a day. All arrangements were made to begin marketing coal here on the first instant. Only one difficulty was encountered, but that has been insurmountable. It is alleged that the Ohio & Mississippi Railroad refuses to carry more than one car-load a day for the Knights, and the Illinois Central declines to carry any coal whatever. Evidence is taking by a special committee of the State Executive Board concerning a conspiracy against their mines, said to exist between the railroads, coal operators, and the banks. The recently elected labor representatives will, it is announced, bring th evidence before the State Legislature.

MARYLAND.

At the annual meeting of the New Central Coal Company this week, Mr. E. J. Sterling was substituted on the Board of Directors for Dexter A. Hawkins, deceased.

PENNSYLVANIA.

ANTHRACITE.

The receivers of the Philadelphia & Reading Railroad Company have concluded to have their coal mined on contract for the present, instead of leasing the collieries. This, it is stated, will save nearly $500,000 in the course of a year.

The Pennsylvania Railroad Company has begun the movement of anthracite coal over its Pennsylvania Schuylkill Valley Railroad, starting with thirty cars a day, to be increased this week to fifty cars. The shipments of anthracite to Baltimore and Washington over the Baltimore & Ohio have become so large as to absorb a considerable portion of the Reading Railroad equipment, and the result of this has been to greatly straiten that corporation in its efforts to get cars to meet the requirements of this trade.

In the ejectment case of Isaac X. Grier, of Danville, and Mary Q. Davis, of Easton, against the Pennsylvania Coal Company, on trial in Scranton, the jury rendered a verdict for the defendant on the 11th inst. The case involved 190 acres of coal land on the Moosic Mountain. The property is worth $450,000. A corner established by a state surveyor in 1794, but since effaced, caused the suit. The plaintiff claimed that the corner was located at a point fifty-seven rods inside the present line of the defendant's land.

A cave-in occurred on the 17th inst., at Shenandoah, which took down fully four acres of that section of the town, upon which stand upward of fifty houses. The surface settled from two to four feet, and the property was damaged considerably. The cave-in was caused by the robbing of the workings of the Kohinoor Colliery, which is located under that portion of the town.

The coroner's jury rendered a verdict on the 14th inst., censuring the Delaware & Hudson Canal Company for violation of the mining laws at the Conyngham Colliery, Wilkes-Barre, where several men were killed and injured by an explosion, as mentioned in our issue of November 27th. Mine Inspector Williams, of Wilkes-Barre, is also censured for not enforcing the provisions of the mine law in this colliery.

The report that the Pennsylvannia Railroad had purchased the Borie lands on Broad Mountain has been contradicted by the company. It is, however, stated that the Hayden and Leisenring lease of a portion of the Borie lands has been leased to Stickney, Conyingham & Co., the sales-agents of the Pennsylvania Railroad Company, and will be developed and worked to furnish anthracite coal transportation for the Pennsylvania Schuylkill Valley Railroad.

COKE.

About 400 ovens have now been fired up at the Standard mines, and the first coke made since the recent fire was drawn last week. The crusher has also been again put in operation.

TENNESSEE.

Mr. J. R. Owen is opening coal property at Owen, showing favorable prospects.

GAS AND OIL NOTES.

Exports of refined, crude, and naphtha from the following ports, from January 1st to December 11th :

	1886. Gallons.	1885. Gallons.
From Boston	5,390,292	8,305,845
Philadelphia	143,729,395	144,898,494
Baltimore	14,580,160	10,531,107
Perth Amboy	6,082,050	...
New York	374,519,286	352,099,489
Total exports	544,301,183	515,834,935

The Chief of the Bureau of Statistics reports the total values of the exports of mineral oils from the United States for the month of November, 1886, and during the eleven months ended November 30th, 1886, as compared with similar exports during the corresponding periods of the preceding year, as follows : November, 1886, $3,987,190 ; November, 1885, $3,483,171 ; eleven months ended November 30th, 1886, $43,424,814 ; eleven months ended November 30th, 1885, $45,097,073. These exports comprise about 99 per cent of the total exports in mineral oils.

KENTUCKY.

The Economic Gas and Heating Company, which has been boring for natural gas in Mead County, has struck gas at the depth of 475 feet. The gas shot up in the air in a blaze twenty-five or thirty feet high when first reached.

PENNSYLVANIA.

The Standard Oil Company has decided to erect a new refinery in Franklin. The works will be located northwest of the Eclipse Works, and will be larger than the Eclipse. At a recent meeting in New York, a fund of $250,000 was voted to begin building.

The gas supply from the fields near Bradford to Buffalo continues full and satisfactory. The pressure at the wells has not decreased, and at Buffalo is over 200 pounds.

The Manufacturers' Gas Company, composed of anti-Standard people, has been organized at Bradford, with a capital of $75,000, which will be increased as occasion requires.

GENERAL MINING NEWS.

ARIZONA.

PHŒNIX.—This stock, which has but recently been admitted into the dealings of unlisted securities at the Stock Exchange, was listed at $6, and showed a rapid advance to $9 ; quoted at present between $8@9. The history of this mine shows that it was discovered and located in 1881, and was worked in a quiet way until one day it was "jumped." A ligitation ensued, and the decision was in favor of the "jumper." A subsequent trial then took place, and the original owners were restored to the possession of the mine, which has since been worked energetically. A tunnel some 540 feet long is driving through a mass of gold-bearing ore, of an average assay of $21 a ton. There is abundance of timber and water on the property. A 200-stamp mill is soon to be erected.

PIMA COUNTY.

MILWAUKEE MINING AND MILLING COMPANY.—The Cordovia mine, forty miles south of Nogales, and near the Sonora Railroad, has been sold to a syndicate of Milwaukee capitalists, who organized the above company. It is the intention to erect a large mill.

ARKANSAS.

OUACHITA VALLEY GOLD AND SILVER MINING COMPANY.—This company has been organized with a capital stock of $5,000,000, shares $25 each ; $30,000 have been paid up. The main office will be in Hot Springs. The company owns over 840 acres of good mineral-bearing property. Work has begun on several of the company's claims.

CALIFORNIA.

MONO COUNTY—BODIE DISTRICT.

Reports for the week ended the 5th inst. :

BODIE.—On the 5th inst., there were shipped to San Francisco $8913.86.

BULWER.—The west cross-cut has intersected the Stonewall vein, upon which they are now rising to connect with the Stonewall tunnel. There were shipped to the mill 388 tons of ore ; average pulp assay, $18.76. Shipped to San Francisco on the 2d inst., $11,238.68.

CONSOLIDATED PACIFIC.—The company has rented the Miner's mill, and hauling ore has begun. It was expected to begin crushing on the 8th inst.

MONO.—Rich ore is taken out above the 700 level. The mill started to crush Mono ore on the 5th inst.

STANDARD CONSOLIDATED.—There were shipped to the mill 300 tons of ore during the week. The mine continues to look well.

SIERRA COUNTY.

PHŒNIX CONSOLIDATED.—This company has been organized, with a capital stock of $3,500,000, to work property at Sierra City.

COLORADO.

ARAPAHOE COUNTY.

HOLDEN SMELTING COMPANY.—A fourth furnace was started up at these works in Denver.

BOULDER COUNTY.

CARIBOU.—It is stated that this well-known property will soon be started up. There is talk of consolidating it with some other adjoining claims.

CLEAR CREEK COUNTY.

ALICE.—The mill built at the head of Fall River by this company is completed and ready to treat ore. Every thing is so arranged that the free-milling dirt can be run into the mill at a small cost, so that ore of comparatively low grade can be treated with a profit.

COLORADO UNITED.—We hear from good authority that the Terrible mine is not looking well ; in fact, has very little ore in sight, though it is not unlikely that a movement to boom the stock may be made. The stock is not dealt in here, but on the London market.

PAR AND HORN-BLENDE.—"Diamond" Joe Reynolds has purchased these mining claims on Silver Creek, in Montana Mining District. These claims are adjacent to the Joe Reynolds lode.

PURITAN.—At the annual meeting, the following were elected : J. M. Pattee, President ; W. C. Johnson, Secretary ; and D. J. Field. Developments on the company's property are steadily pushed with encouraging results.

RED ELEPHANT.—Extensive work will probably soon begin at these mines, which were purchased by "Diamond" Joe Reynolds last September, and for this purpose Mr. Reynolds recently visited the mines.

GILPIN COUNTY.

CALEDONIA SYNDICATE COMPANY, LIMITED.—The sale of the Caledonia No. 1 and No. 2 lodes in Lake District was made about two weeks ago, and they were transferred by deed to this English company, the consideration being $40,000, the larger proportion of which was paid in cash. In our issue of November 13th, we referred to the organization of this company, which has a capital stock of £25,000.

RARA AVIS.—This company is working the Whitney mine, on Prosser Mountain. The 450-foot east and 500-foot west levels are driving, as also backstoping above the tunnel level, which strikes the main shaft at a depth of 300 feet. A large vein of galenous ore has been found in this back stope, besides concentration ore.

LAKE COUNTY.

From the Leadville *Herald-Democrat*, we condense the following :

ADAMS.—Developments in the lower level of the second contact prove most gratifying. The south drift from the Brookland shaft has advanced over thirty feet, continuing in a solid body of sulphide ore, carrying a great excess of lead and a gratifying amount of silver. It is quite probable that an inclined drift will be started westward on the vein soon.

BENTON.—The lessee of the Park mine, belonging to this company, proposes to sink the No. 4 shaft in search of a second or lower ore-body. It is thought that a second vein should be found at a depth of about 500 feet from the surface.

CROWN POINT.—The mine has been closed down. It is stated that it has not paid for some time past, and that, in order to continue the extraction of ore, better smelting rates had to be obtained. The suspension, it is thought, will be of short duration.

TIP TOP.—This mine, owned by Messrs. Taussig and others, of St. Louis, paid a dividend of $16,000 to its owners on the 4th inst. The property continues to show the most favorable prospects.

PITKIN COUNTY.

The Aspen apex and side-line suit was called in the Denver United States Court, on the 6th inst., Judge Hallett presiding. The defenders of the apex claim have opened the trial, and the taking of testimony progresses at the rate of four witnesses a day. It is stated that nearly a hundred witnesses and experts are to be questioned, and great effort is making to get through with the case before Christmas. The questions at issue are illustrated by maps, photographs, and models, which enables the jury to obtain a very correct idea of the topography and geology of the Aspen District. The jury embraces but one mining man, the remaining eleven being ranchmen and mechanics, from various portions of the State. Judge Hallett ordered the jury locked up. In explanation, he said that recent experience compelled him to do this, although it caused him embarrassment.

GERMANY.

SAXONY.

Cable advices report that the Saxon government has decided to stop operations at several silver mines that have been worked for more than a century, owing to the continued depreciation of silver. Among them is the Kurprinz, known to be a very rich mine.

IDAHO.

SUNSET.—This mine, on Sunset Peak, at the head of Beaver Creek, in the Cœur d'Alene country, has been purchased by Joseph K. Clark, William A. Clark, Oliver Durant, and Alexander Tarbet, all of Butte for $17,500. The Sunset is a galena mine of high grade.

WEST CAMAS.—This claim has been bonded to Capt. T.W. Buzzo. The price is somewhere between $10,000

and $20,000, and the cash must be paid by the 2d of January, 1887. The West Camas is probably the most promising claim between the Camas No. 2 and the Alaska. Probably not over $300 worth of work has been done on the claim, which has a shaft about 15 feet in depth, an open cut, etc.

ILLINOIS.

BLACK OAK MINING AND MILLING COMPANY.—This company has been organized at East St. Louis, with a capital stock of $3,000,000; incorporators, Frank M. Weaver, George Cousins, and George W. Campbell.

JUNIPER CONSOLIDATED MINING AND SMELTING COMPANY.—This company has been organized at East St. Louis, with a capital stock of $2,000,000: incorporators, G. A. Runk, John F. L. Lewis, R. B. Caples, and L. E. Taylor.

MICHIGAN.

COPPER MINES.

CALUMET & HECLA.—In November, the company had an average of but nine heads of stamps in use, on account of the supply of rock being reduced by extra work and changes at the mine. Rock from the Black Hills shafts is expected soon in amounts to keep the mills in full supply. It is stated that the approximate mineral product of the company for eleven months of 1886 is 28,369 tons, against an approximate return of 26,751 tons in eleven months of 1885, showing a gain of1618 tons.

FRANKLIN.—No. 5 shaft, sinking below the twenty-sixth level, shows a very good lode for barrel and stamp copper. The drifts at the twenty-sixth level are opening ground that will pay a good profit when stoped. No. 3 shaft has been connected with the drift from No. 2 shaft, at the twenty-seventh level. The lode in this opening is giving a large amount of a better class of rock than has been seen in this part of the mine for some years past.

HURON.—At No. 8 shaft, sinking below the fourteenth level is exposing a fair lode for stamp copper. The ground north of the shaft shows very well in all grades of mineral. The drifts at the fourteenth level north and south of No. 6 shaft are in good stoping ground. The richest part of the lode stands toward the hanging-wall, which can not be taken down to advantage until the drifts are extended a few feet more.

KEARSARGE.—The lode is now cutting through at the second level in No. 2 shaft, and developments (seven feet exposed) show that the rock is good, and there has been a good amount of copper in the rock broken thus far.

NATIONAL.—Recent explorations have met with much encouragement in the finding of good copper-bearing ground. Work at this mine began in 1848, and continued until 1871, after which it remained idle, except for tribute work, until May, 1880, when work was again resumed in a quiet way, freeing the mine of water, etc.

OSCEOLA.—The company is getting ready to cross-cut west from the vicinity of its No. 2 shaft on the amygdaloid lode toward the Calumet & Hecla conglomerate at the sixteenth level, which will show the character of the ground, about which there has been considerable speculation of late.

Product of copper for October (pounds).....	328,232
Present price of lake ingot per pound (cents.)..	12
Value of October product.....	$39,387.84

Total expense to lay down in New York, the Boston papers estimate at 7·8 cents per pound.

The Osceola directors are about ready to make a dividend, and early in January, it is said, will declare $1 a share.

QUINCY.—The monthly report of the agent, dated the 4th inst., shows the progress made in November, and the condition of the mine at the close of the shipping season. It says: The Arctic left here on the morning of November 26th, having on board all our copper to that date. There has been no opportunity to ship any since then, and navigation is now closed. Our product for November was 473 tons. From present appearances, our total product for this year will be very nearly the same as that of last year. The November product of the mine, given above, was the largest for any month except November, 1885, and November, 1881.

IRON MINES.

AURORA.—John E. Burton was paid $600,000 at the Merchants' Exchange Bank, Milwaukee, on the 14th inst., by the representatives of an Eastern syndicate and a number of Milwaukee men for 200,000 shares, constituting his interest in the Aurora mine at Ironwood. The buyers are Captain Moore and Jacob Wellauer, of Milwaukee; W. J. Turner and A. E. Hull, of Minneapolis; Husey, Hoyt & Co., of Cleveland; Hamilton, Bishop & Co., of New York; Benjamin M. Weil, of Milwaukee; Andrews Upson, of Connecticut, and others.

LAKE SUPERIOR.—The company has filled all its contracts for 1886, and has practically closed business for the year. The year's output amounted to 267,622 tons of ore. The management intends working the mine to its full capacity all winter. No particular changes are made in the old workings of the mine other than the continued taking out of ore makes necessary. In the matter of new developments, considerable work is done to the west and north of the Lake Angeline mine. All the new workings of the Lake Angeline dip to the west and toward the Lake Superior property adjoining. From the shaft sunk just west of the Lake Angeline property's line, diamond drill holes have been run across what appears to be the direction of the Lake Angeline ore-body.

NATIONAL.—The deep adit at this mine, which, when finished, will be 3770 feet long, will be ready, it is expected, in time for the spring waters to be carried through it. The design of this adit is to drain the mine above the sixth level (below what was formerly the deep adit), thus taking away all the water that pours in from the Minesota and Rockland mines at the third level, and also to afford cheap and easy facilities for bringing out all the rock for stamping, instead of hoisting it to the surface. It is proposed, when this adit reaches the No. 2 shaft, to turn its course northward until it intersects the amygdaloid stamp lode, when it will be continued east in the course of the vein, so as to open a mine on it, and furnish stamp rock for the mill.

MONTANA.

JEFFERSON COUNTY.

CENTRAL MONTANA PLACER MINING COMPANY.—This company has been organized with a capital stock of $1,250,000, shares $10 each. The incorporators are C. K. Cole, W. B. Reed, E. D. Edgerton, and Joseph N. Kenck. The property to be operated is situated near Bafin, Jefferson County.

KIT CARSON MINING COMPANY.—This company has been organized with a capital stock of $1,000,000. The incorporators are S. T. Hauser, A. M. Holter, J. O. Briscoe, E. W. Beattie, and George D. Beattie. The Kit Carson mine is in Jefferson County, and will be tapped by the Boulder Valley Railroad.

LEWIS & CLARKE COUNTY.

ELKHORN—The output for November was about $18,000. The additional five stamps in the mill are now at work.

EMPIRE.—During November, there were crushed 600 tons of ore, which yielded $16,000.

MONTANA COMPANY, LIMITED.—The employés of this company have organized a provident and accidental insurance company. After the 12th of December, each will pay into the fund $1.50 a month. All employés of the company are compelled to become members of the association. The Montana Company will also contribute to the fund 50 per cent each month of the total sum contributed by the employés. In case of sickness or accident, $1.50 a day during the time under medical treatment will be paid; and in case of death by accident, $1000 will be paid to the legal heirs of the deceased. The association will be governed by a board of four trustees, who elect a secretary from among their number, who will be the custodian of the funds. The production for November was $189,100. This was the work of the old and new mills together. The old mill kept its sixty stamps dropping throughout the month, and the new one, also a sixty-stamp mill, was running for the last ten days of the month.

MEAGHER COUNTY.

HUDSON.—This company is erecting a concentrating plant of a daily capacity of from 100 to 125 tons for its low-grade ores near Neihart. The machinery is furnished by the Fort Scott Foundry and Machine-Works, Fort Scott, Kansas, and consists of the following: Blake crusher, three sets of heavy Cornish crushing rollers for crushing the raw material, a series of revolving screens and classifiers for sizing the ore, a number of jig machines and rotary tables for separating the ore, and other machinery necessary for a complete plant, as well as a turbine wheel for motor.

SILVER BOW COUNTY.

LEXINGTON.—We have been officially advised that the production for November was: Gold, $7535; silver, $58,650; total, $66,185.

NEVADA.

ELKO COUNTY.

Reports for the week ended the 10th inst.:

NEVADA QUEEN.—The east cross-cut No. 1 from the gangway on the 150-foot level was extended 26 feet during the week ended the 3d inst., the last 8 feet in vein matter, a portion of which is high-grade ore. No sign of the foot-wall as yet. No. 1 shaft is down 100 feet; water has increased. South drift No. 2, shaft has been advanced 26 feet. The vein has been broken up, but looks like coming in regular, as the ore is showing again in face of drift.

TORNADO CONSOLIDATED.—The adit tunnel advanced 15 feet. Quartz giving low assays shows in the face. Contractors have commenced to sink a winze on a vein of sulphuret ore, giving fair assays.

EUREKA COUNTY.

RICHMOND CONSOLIDATED.—The report presented at the half-yearly general meeting, held in London, on the 7th inst., shows that the furnaces were shut down from March 4th to June 1st, so that smelting was carried on for only three months during the half-year. In this time, the general furnace reduced 1580 tons of Richmond ore, 1719 tons of purchased ore, and 21 tons of flue-dust; together, 3320 tons. No. 4 (refinery) furnace smelted 16 tons of Richmond, 835 tons of purchased ore, and 20 tons of flue-dust; the total quantity smelted in the half-year being 4182 tons. While shut down, the furnaces were put into thorough working order, and all machinery overhauled and repaired. Explorations have been carried on in the mine as usual, £1879 having been expended in dead-work during the half-year, and a diamond drill has been purchased to facilitate these operations. Prospecting will begin immediately in the ground lately held by the Albion Company. Further large sales of lead have been made since last report, the stock on hand at the end of the half-year being about 2500 tons.

STOREY COUNTY—COMSTOCK LODE.

From the Virginia City *Chronicle*, we take the following:

The following are the financial balances of the various mining companies on December 1st:

	Cash on hand.		
Alpha	$10,750.00	Gould & Curry	$24,564.38
Alta	25,669.14	Hale & Norcross	16,474.00
Andes	9,351.65	Julia Cons	97 33
Belcher	2,237.47	Kentuck	4,586.98
Bullion Con	7,142.85	Manhattan	16,839.85
Best & Belcher	33,876.00	Martin White	3,331. 7
Booker Con	1,571.15	Mexican	6,101.26
Challenge	3,315.87	Ophir	14.65
Chollar	4,115.32	Occidental	7,398.94
*Con. Cal. & Va.	48,812 97	Savage	12,024.27
Con. Imperial	5,499.86	Union Con	3,929.18
Exchequer	21,023.10	Utah	3,071.40

* Assay value of unsold bullion, $237,014.27. To this will be added two shipments made subsequent to December 1st, valued at nearly $115,000, swelling the balance of bullion and cash on hand to a total of $400,827.24. From this must be deducted a portion of the November operating expenses remaining unpaid.

The pay-rolls of the different mining companies for November aggregate $176,174.

BEST & BELCHER.—On the 600 level, east cross-cut No. 1 has now a total length of 631 feet. This drift is in clay and vein porphyry. East drift No. 2, started 90 feet northeast from No. 1, advanced 48 feet. The face is in porphyry. On the 800 level, at the north boundary line, an east drift has now a total length of 70 feet. On the 1500, the station is reopening preparatory to exploring that level.

CONSOLIDATED CALIFORNIA & VIRGINIA.—The superintendent's report for the week ended the 4th inst. shows that on the 1300 level a drift started north from the station in the Consolidated Virginia shaft was advanced 46 feet; total length, 409 feet. This drift has passed through 10 feet of good ore, and is now in a lower grade, mixed with mineralized vein matter. It will be driven 140 feet farther, to connect with the uprise from the 1400 level. When this connection is made, an air-way will be established, and explorations can be conducted more advantageously. On the 1400 level, a winze excavating below the track-floor of the south drift at a depth of 70 feet cut into good ore, carrying stringers of exceedingly rich material. This winze is located 300 feet south of the Consolidated Virginia shaft. It will be sunk to connect with the south drift on the 1500 level, and will open up for exploration a large area of virgin ground lying south of the old stopes. On the 1435 level, a hoist-engine has been set up in the station excavated in the east clay wall. A winze is going down below the track-floor at

this point. On the 1500 level, the drift running north from the Consolidated Virginia shaft was advanced 57 feet; total length, 268 feet. This drift has cut into low-grade ore. On the 1600 level, the drift running south from the north end of the mine was extended 42 feet; total length, 442 feet. On the 1650 level, the drift running southwest from the C. & C. shaft was extended 16 feet; total length, 562 feet. The distance, says the *Chronicle*, between the north line of the Consolidated California & Virginia, where the first ore development was made last September, and the Best & Belcher north line, is over 1000 feet. Whether the ore extends in an unbroken line for that length, can only be demonstrated through future explorations. But the fact that there are valuable deposits located at both the north and south ends of the mine indicate that the present development far exceeds in proportions that of the bonanza struck in 1874. The usual quantity of ore of fair value is extracted from the different levels of the mine. During the week, 1066 tons of ore were shipped to the Morgan mill, and 1848 tons to the Eureka mill. The average value of all the ore milled during this period, according to the assays from the battery samples, was $40.03 a ton. Bullion valued at $96,250.55 was shipped to San Francisco.

GOULD & CURRY.—Repairs to the main shaft are in progress. This work will be prosecuted through the north compartment, and will not interfere with the progress of operation below the surface. Pending repairs, the hoisting will be done through the south compartment.

HALE & NORCROSS.—The south drift on the 1300 level is out 70 feet in low-grade quartz. The incline has been reopened down to the 1700 level. The second station on the 550 level is reopened, and also the seventh.

OCCIDENTAL.—At a point in the north incline winze connecting the upper and lower tunnel, a south drift was started, and is out 22 feet. Extracted eight tons of low-grade ore during the week.

POTOSI.—So far, the south drift on the 250 level has stripped the vein 80 feet in length, showing high-grade ore throughout. The southeast drift shows 95 feet of ore. The face is out 350 feet beyond the Sharon shaft. Preparations are in progress for the exploration of this ore-development by sending in cross-cuts and sinking a winze below the floor of the drift.

SAVAGE.—On the 500 level, a west cross-cut sent in from the south lateral drift shows 12 feet of ore. On the 600 level, a winze sent down below the track-floor of the south lateral drift, at the point where ore was stoped out, is showing ore of good quality. On the 825 level, the advance of the south lateral drift has stripped the vein a length of 40 feet, and the face is now within 200 feet of the shaft. On the 1640 level, the east vein cut in driving the Sutro Tunnel is showing high-grade ore. When this vein was cut years ago, Superintendent Keating opened it up by putting in a few square sets of timbers preparatory to prospecting it. The subsequent decision of the company to explore the deep levels caused a suspension of operations at that point, as the ore was only a little above the average milling grade.

WHITTIER DREDGE AND BULLION COMPANY.—The small steam dredge that Dr. Rae had constructed to prospect the Carson River bed is in successful operation near Dayton. The deposit varies in depth, it is said, from four to 90 feet. Careful assays of the material in bulk ranged from $3 to $75 a ton. Of this, 50 per cent is quicksilver and amalgam, and 25 per cent sulphurets.

YELLOW JACKET.—It is rumored that John W. Mackay has secured a control in this mine.

PENNSYLVANIA.

CAMERON COUNTY.

The capital of the Cameron Coal and Iron Company, of Philadelphia, to which we referred last week, has been increased from $1,000,000 to $3,000,000.

TENNESSEE.

The Nashville, Chattanooga & St. Louis Railroad will issue bonds to the amount of half a million dollars for the purchase of the Tennessee Coal and Iron Railroad from Cowan to Tracy City.

The Baltimore, Nashville & Memphis Railroad Company has been organized for the construction of a line that will pass through rich coal and iron lands in Tennessee.

UTAH.

BEAVER COUNTY.

HORN-SILVER.—The company is said to be selling some ore, says the Salt Lake *Tribune*, but the usual reticence and air of mystery attaching to the operations of this company prevail. The ore is said to bring in Salt Lake City from $15 to $10 a ton.

SALT LAKE COUNTY.

SALT LAKE IRON, LIME, AND ROCK COMPANY.—This company has been organized, with a capital stock of $500,000, shares $5 each, by George T. Adkins, C. M. Gilberson, Alexander Mitchell, E. F. Roberts, Samuel C. Nash, F. M. Bishop, and W. G. Van Horn, and has purchased the following mining claims: The Eureka No. 1, Eureka No. 2, Ingersoll, Ingersoll Extension, Star of Hope, Daisy, General McCook, and Hendricks, and the Mammoth lime stone quarry, all situated in the Hot Springs District. The principal place of business is in Salt Lake City, Utah.

VIRGINIA.

STAFFORD COUNTY.

RAPPAHANNOCK.—The superintendent's report, dated the 12th inst., shows that the ore in the face of the drift on the 250-foot level is excellent, and the vein continues the usual width, from five to six feet. The mill runs steadily.

MARKETS.

NEW YORK, Friday Evening, Dec. 17.

Silver.

DATE.	London. Pence.	N. Y. Cents.	DATE.	London. Pence.	N. Y. Cents.
Dec. 11..	46¼	100¼	Dec. 15	46⅜	100¼
13..	46⅜	100⅜	16	46¼	99⅞
14..	46 7-16	100½	17	46¼	100*

* Opened at 99½, closed at 100.

The stringency of money, and the consequent depression of foreign exchange, have operated, both here and in London (as is reflected in raising the bank rate to 5 per cent), to lower the price of silver, and lessen the commercial demand.

The bill for the retirement of the trade-dollars was passed by the Senate to-day; but it is doubtful whether it will pass the House, although it is evidently a measure of simple justice. The act by which the trade-dollars were deprived of currency was a gross injustice, and they should be retired. The bill provides that $500,000 a month shall be retired, and shall be credited to the account of the $2,000,000 silver purchases, which may be the objection in the House.

Foreign Bank Statements.—The governors of the Bank of England, at their regular weekly meeting, advanced the bank's minimum rate of discount from 4 to 5 per cent. During the week, the bank lost £157,000 bullion, and the proportion of its reserve to its liabilities was reduced from 45⅛ to 43⅛ per cent, against 46 1/16 per cent at the same time last year. On the 16th inst., the bank lost £380,000 bullion, withdrawn for shipment to America. The weekly statement of the Bank of France shows losses of 13,200,000 francs gold, and 275,000 francs silver.

Copper.—The copper market here is very quiet and very strong, with prices 12c. for Lake and 11@ 11⅛c. for Orford and Baltimore. The foreign market is weaker, and Chili Bars have again declined to £38 12s. 6d. to-day in London. There is absolutely nothing in the statistical position here to justify the continued depression in London, though Anaconda is running.

We have received mail advices from our special correspondent, dated December 12th, in which he says: "The Anaconda smelter is now supplied with more coal, and is running to-day eighteen matting-furnaces, wenty calciners, and all of the old concentration mill. On the 14th, they expect to run two more matting-furnaces and four more calcining-furnaces. Their mine at Butte City is running *full*, paying the same wages to miners as before the shut-down. The first matte from Anaconda was shipped a few days ago." We are also told that the company has made several improvements that will reduce its cost of production.

This may afford a supply to our refining-works in the East, and may thus affect our prices of casting brands; but our English reports show that the prices that can be obtained in England are as low as when the mine stopped.

The very high freights by rail, $15 a ton from Lake Superior to New York, are considered prohibitory, and the lake companies will probably not bring any forward until the price has advanced sufficiently to over at least the extra half-cent over water transportation. We anticipate higher prices next month, in consequence.

Extracts from James Lewis & Son's monthly report on ores and metals, Liverpool, December 1st, 1886:

The actual position of affairs at the Anaconda mine and works is, that on the 8th inst. notice was given that, if the "skimmers" at the smelters would accept a reduction in wages of from $4.50 to $3.50 a day, and the laborers from $3 to $2.50 a day, the works would restart on the 11th. After some deliberation, the men employed at the works decided to decline the offer, and so they did not reopen on the day specified. No attempt was made to reduce the wages of the men employed at the mine, as a union existed among them, and the owners of the adjoining silver mines were not willing to concur in a reduction. We are, however, to-day advised that the mine and works have started again; so we presume the men have accepted the terms of the company.

During the past three months, considerable alterations and extensions have been made both at the mine and the works; the ores in future being dressed at the former, instead of at the latter, as has hitherto been done. These improvements, with additions to the plant, will enable the company in future to increase their production of matte about 1000 tons a month—say from 3000 or 4000 tons to 4000 or 5000 tons of 2000 pounds a month. The railroad companies are stated to have conceded a reduction in their rates of freight. Other mines have been acquired by the Anaconda Company.

Opening at £40 12s. 6d. for Cash Bars, values fell away to £40 5s. on the 9th inst., recovered to £41 on the 10th, when considerable buying took place—supposed to be on American account—up to £41 15s, being paid for three months prompt, and remained at about £40 15s. for cash until the 22d, when one of the previous chief buyers turned seller, and down to £39 12s. 6d. was accepted for a large quantity of cash and early prompts. On the 29th, £39 17s. 6d. was paid for cash, but the closing prices to-day are £39 7s. 6d. for cash, and £40 for three months prompt.

American arrivals in England and France for the past eleven months are 16,666 tons fine, against 31,679 tons during the same period of last year, a decrease of 15,013 tons.

The arrivals from Chili during the month have been 2051 and the deliveries 1965 tons, and from other countries 3707 and 3197 tons fine respectively. The arrivals here from the United States have been 95 tons bars, and 341 matte, equal to about 297 tons fine copper and in France 275 tons fine. The stocks continue to increase, being 745 tons more than a month ago, but the visible supply is 193 tons less. The Chili charters for the month are 2300 tons, and the closing rate of exchange is 23⅞d.

Henry Bath & Son's copper report, December 2d, says:

The Chili charters for the second half of November are advised as 900 tons fine copper, with price of bars $16.65 and exchange 23⅞d. In the early part of the past fortnight, the value of Chili Bars improved to £40 17s. 6d. cash, £41 10s. three months, but on sales being pressed, fell 25s. a ton. After a slight reaction, we close lower than before at £39 5s. to £39 10s. cash, and £39 15s. to £40 5s. three months. Business has continued restricted. Our home trade is very dull, and there is an absence of orders from India. The smelters are adopting an observant attitude in view of the disorganized state of trade, and confine purchases to their immediate requirements. Our market offers a great contrast to that of America, where there is a good demand for consumption and practically no stocks. The Lake pool has just closed sale of ingot copper, to home consumers, for December and January, at 12 cents a pound. There have been various rumors current about Anaconda. It is now generally accepted as a fact that the works and mine have started. It remains to be seen, whether any of this produce will find its way over at present low level prices reigning here. Deliveries for the fortnight have been 3669, against imports of 5015 tons, showing an increase of 1346 tons in stocks. The total visible supply shows 62,740 tons, against 63,394 tons. American imports have been 127 tons into England and 25 tons into France, = 152 tons, against 1225 tons last year. Furnace material in stock is beginning to increase, and is likely to continue to do so unless holders give way in price. The smelter

consider rates asked out of the question, and appear disposed to curtail their requirement as much as possible. Transactions only comprise about 700 tons Italian ores at 7s. 9d. to 7s., and 400 tons Spanish precipitate at 8s. 1½d. per unit.

Tin.—This market has varied but little here from 22·35@22·45c., and is quoted to-day by cable to the Metal Exchange at £100 15s. for spot Straits and £101 10s. for three months. The business on our Exchange has been quite active, aggregating 325 tons sold at 22·30@22·40c. for prompt shipment, and 22·35c. for January, 22·40c. for February.

Messrs. French & Smith report under date London, December 2d, as follows:

During the first half of the past month, the demand was very quiet and values ranged from £99 10s. to £100 for Straits; later, however, requirements were considerable, and price quickly advanced to £102 cash, closing easier at £101 10s. At the moment, there is very little speculation in the article. The market, although chiefly governed by trade demand, is a highly sensitive one, owing to the smallness of stocks. From the figures below, it will be seen that the supply during the past twelve months was about the same as during the previous twelve months, but that during that period consumption showed an expansion of over 2000 tons. There are signs of this increase of consumption continuing, for it does not yet equal the period ended 1884.

On the 30th ult., the Dutch Trading Company sold 22,828 slabs Banca at average of fl. 61⅜ = £102 10s. per ton in Holland.

The following were the stocks on December 1st for three years, in tons of 2240 pounds:

	1886.	1885.	1884.
Foreign in London	4,523	7,037	4,703
Banca in Holland	1,057	940	1,413
Billiton in Holland	811	643	1,114
	6,391	8,620	7,230
Afloat for England, Straits	1,056	455	1,405
Afloat Australian	714	1,261	1,825
Afloat Billiton	806	664	943
	8,967	11,000	11,403
Stocks in America, estimated and afloat	2,122	2,212	1,858
Stocks in Dutch Trading Company's hands and afloat for future bi-monthly sales	1,724	2,247	3,142
Price of foreign	£101 10	£93 10	£74 15

Lead.—There has been nothing worthy of record in this metal. A sale of 100 tons at 4·30 cents is reported, and 4·35 is asked, but buyers are scarce and hard to find at the lower figure. No activity is expected this month, but a good business is looked for next year.

Manufactures.—Lead Pipe is quoted at 6¼c. and Shot at 7¼c., less the usual 20 per cent discount. Shot is $1.60 for Drop and $1.85 per bag, 25 pounds, for Buck and Chilled. Tin-lined Lead Pipe, 15c., less 20 per cent discount.

White Lead.—The combination prices are announced as follows: 7¼c. per pound net in quantities of less than 500 pounds, and 7 days, or 2½, 60 per cent discount for cash in 15 days from date of invoice. For 25-pound, 12½-pound, and 1 to 5-pound assorted cans, an additional charge of 1@1½c. and 2½c. respectively, is made. The rebates are 2 per cent on less than 10 tons purchased during the year, 3 per cent on 10 to 25 tons, and 5 per cent on 25 tons and over. Rebates are payable at the end of the year to buyers who have observed the rules of the Association.

Messrs. John Wahl & Co., of St. Louis, telegraph to-day as follows:

Buyers seem to have more confidence in the market, and are looking around more freely. For both Common and Refined, 4·10c. Some desilverizers ask 4·12½@4·15c. Future lead is offered very sparingly. Sales for the week sum up about 600 tons at 4·10c.

Messrs. Everett & Post, of Chicago, telegraph to us as follows to-day:

The market is a little easier, owing to advices from New York. Some holders quote 4·12½c., and ask for bids. Nominal price, 4·15c. Offerings are very light.

Spelter.—The London market is cabled £14 7s. 6d for Silesian.

New Jersey Zinc Oxide. 4@4½c., according to grade. Western brands have been advanced, most of the spelter in this city having passed into the hands of a speculator. We quote 4·40@4·55c. in store for Western brands, and 6½@7c. for New Jersey.

Antimony.—Hallett's we quote 7c. for prompt shipment. There is no Cookson's here, but 9c. a pound is asked for thirty days. Hallett's is quoted in London to-day by cable to the Metal Exchange at £30 which is an advance of 10s. since our last.

Nickel.—We quote 60c.

Bismuth—Is quoted at $2@$2.25 a pound.

Aluminium—Is quoted at 90c.@$1 an ounce.

Quicksilver.—The market remains unchanged, and we continue to quote 52½c. a pound here, and in London £7 5s.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Dec. 17.

American Pig.—The pig-iron market has not felt even the slightest shock from the earthquake that shook Wall Street this week; on the contrary, the Thomas Iron Company's prices, which we announced last week at $20 for No. 1 X and $19 for No. 2 X, have been accepted as very conservative, and already some companies are asking higher prices.

Large orders have been already booked, and manufacturers, it is said, are having their orders cut down to last year's amounts, though they are generally asking for a larger amount, in anticipation of increased business in 1887. This feature is very satisfactory, and fully confirms the general feeling with regard to business that we find in other directions.

Southern irons are little heard of at present, except that they are behind in filling contracts, the great Western market having already absorbed the make of Alabama and Tennessee furnaces for some months ahead.

We already hear that some Alabama furnaces are banked for want of fuel, and this is an event that will occur oftener than is generally believed when the 41 Tennessee and Alabama furnaces that are now built or are building, have been put in blast.

Scotch Pig.—The Scotch irons are quoted at an advance of about 2s. per ton in Glasgow, and here they have felt the effect of the higher prices for American irons. There is no Glengarnock or Gartsherrie here. Our quotations for these brands are therefore nominal. We quote: Coltness, $22@$22.50; Gartsherrie, $21; Summerlee, $21@$22; Dalmellington, $20; Langloan, $20.50; Clyde, $20; Glengarnock, $19.50@$20; Eglinton, $19.50. Cables to the Metal Exchange to-day quote: Coltness, 53s. 6d.; Langloan, 50s.; Summerlee, 52s.; Gartsherrie, 49s.; Glengarnock, 45s. 9d.; Dalmellington, 45s.; Eglinton, 44s. 3d.; Warrants, 43s. 10d.; Middlesboro', No. 3, 33s. 4d. Freights are 8@10s.

Bessemer Pig.—Most of our mills are well supplied, but the demand continues active for the season, and the tendency of prices of both Domestic and Foreign is upward. We quote $19@$19.25 at furnace for Domestic, and $20@$20.50 for Foreign.

Spiegeleisen.—The demand continues active. We quote $28@$28.50 asked for both English and German 20 per cent Spiegel, but with a practical difference of 25@50c. a ton in favor of the English.

Steel Blooms and Billets.—The activity in the rail business, and the prospect of higher prices in the early future, make this market strong and active. We quote $29@$29.50 for Rail Blooms. Billets $30@$31, according to size and quality. Chateaugay charcoal billets, 3¾ inches, are worth $47@$47.50 at Plattsburg.

Steel Plates.—We quote: Tank, 2·75c.; Boiler and Ship Plates, 3@3¼c.; Flanges, 3½@3¾c.; Extra Flange and Fire-Box Plate, 4¼@4½c.

Steel Rails.—There are large orders in the market, but no anxiety to sell, most of the mills having gone as far in that direction as is thought prudent. Prices are nominally $36@$37 at Eastern mills.

Structural Iron and Steel.—We quote: Angles, 2¼@2½c.; Tees, 2½@2¾c.; Steel Angles, 2·50@2·60c. American Beams and Channels, 3@3½c., base from dock.

Merchant Steel.—The mills report an active demand, and that they are well sold up. We quote: American Tool Steel, 7½@10c.; special qualities, 11@20c.; Crucible Machinery, 4@4·50c.; Bessemer and Open-Hearth Machinery, 2½c., with a large and steady consumption.

Plate Iron.—The demand is good. We quote: Common Tank, 2¼@2⅜c.; Refined, 2·30@2½c.; Flange Iron, 3¼@3½c.; Extra Flange, 4@4·25c.

Bar Iron.—We quote: Refined at 1·75@2c.; Common, 1·65@1·75c., with a good demand for the season, and an "advancing" feeling in the market.

Old Rails.—Old rails are still extremely scarce, and prices are strong. We quote $24 for Tees and $25 for Double-Heads. Foreign are quoted at 72s., c.f.i.

Rail Fastenings.—We quote Spikes, 2·25@2·40c. a pound; Angle Fish-Bars, 2c.; Bolts and Nuts, 3@3¼c.

Scrap.—We quote $21@$22 for Wrought Yard Scrap.

Cast-Iron Pipe.—We quote $29 for 36-inch pipe to $35 for 4-inch.

Philadelphia. Dec. 16.

[From our Special Correspondent.]

Pig-Iron.—The inquiries made this week were for between 50,000 and 60,000 tons of mill irons, besides large blocks of foundry iron. The Glendon and Andover makers have withdrawn quotations. A feverish feeling prevails all around. The question now is, Will prices stay where they are? Furnace companies would prefer to see demand held in check for the present. If this movement of buying far ahead goes on, it will create a reaction. The mills are more liberally supplied than the foundries. Quotations to-day are $20@$19 and $17.50. Special brands, 50 cents higher for No. 1 and Forge. There is no legitimate occasion for a further advance; but the finer irons have been so largely bought up that consumers are not willing to wait.

Foreign Iron.—A sale of Bessemer was made at $20, and 12,000 tons are wanted at $19.75. Spiegeleisen is offered at $28.25. Steel Rail Blooms are up to $29, with sales of 14,000 tons reported; but the figures can not be depended upon. Slabs are held at $31, and orders were taken at as low as $30.

Manufactured Iron.—Prices are firm at 1·90@1·95c. for Refined at mill, and 1·80c. for Medium iron. The business done each day exhibits a strong undertone. The large consumers will not do much until January. Several mill-owners claim to be getting two cents. The country trade has been broken up a little, but all mills are well fixed.

Plate and Tank Iron.—Things have quieted down. The agents have half closed a great deal of winter and spring work. Ship-yard work is getting into shape. Plate runs from 2·15@2·30c., and Tank from 2·30@2·50c.

Sheet-Iron.—All reports to-day show every thing moving along swimmingly, and card rates paid for every thing ordered, though thin sheets and galvanized are not wanted much.

Nails.—Since the New York meeting, there has been a good deal of discussion and correspondence concerning the projected stoppage of four works, and the effect seems to have been to rather weaken than strengthen prices. At least, some lots have gone at very low prices. Quotation, $2.

Structural Iron.—Bridge-builders are full of work, and have more work in sight; but they will not run into market just now, even with higher prices facing them. Angles are 2·15@2·25c.; Beams and Channels, 3c.

Steel Rails.—Business is done at $36, and some mills ask $36.50@$37 for what they call early deliveries. Two or three mills have had inquiries for large summer deliveries, but the makers do not care to take such remote risks. We hear of negotiations for foreign rails at Gulf ports.

Old Rails.—Brokers, who are dropping on to small lots of old rails, want $25, and nothing less, although business has been done at $24.50. The inquiries for all inland points are very urgent, and some consumers are about out.

Scrap.—The only business doing is in Selected and No. 1 at $22@$23. Contracts were placed for 1200 tons shipment at $21.25@$21.50.

The demand for Merchant steel is very good. The entire iron trade is strong.

Pittsburg. Dec. 16.

[From our Special Correspondent.]

The situation may be summed up in a very few words. The market is firm, active, prices tending still higher. Stocks are scarce, and buyers doing the traveling. Stocks at furnaces, in most cases, are sold ahead. Sellers of raw iron are about as independent as they can well be. Furnace-men are more inclined to hold than to sel.; in fact, they do not know what to ask. Last week, our report contained several thousand tons of imported iron. This week's will be supplied with the same kind of material to a liberal extent. We hear a good deal of talk about the Thomas Iron Company advancing metal $2 a ton over last January prices. At the same time, comparing theirs with Pittsburg prices, you will find that our advance is nearer $3 a ton than $2. The advance in old

rails, muck-bars, wrought scrap—in fact, all kinds of raw material, is in some cases from $4@$5 a ton, so that we can discount the Thomas Iron Company, and have a margin still left. The sales of raw iron for the past three months have far exceeded any thing ever known in the iron trade, and, what is more to the point, the iron is all for manufacturing purposes; no speculation, no large purchases to be stored away to wait for higher prices. Hence there is no accumulation, nor is it at all likely there will be any, for the simple reason that the demand exceeds the supply. Another inquiry is, How long will this condition of affairs last? That is something that no person can find out. The present activity will soon cause furnaces that have been out of blast to blow in as well as build new ones.

Pig-Iron.—Following are the current rates:

Coke or bituminous:	$	$
Foundry No. 1	20.00@19 50	
Foundry No. 2	19.00@19.25	
Gray F., No. 3	18.50@18.75	
" " No. 4	17.50@18.00	
White	17.25@17.50	
Mottled	17.50@17.75	
Silvery	16.5(@19.00	
Bessemer	20.70@21.00	
Charcoal:		
Foundry No. 1	22.50@23.50	
Foundry No. 2	22.0(@22.50	
Cold-Blast	26.50@29.50	
Warm-Blast	24.00@25.00	
20 p. c. Spiegel	30.00@30.50	
Muck-Bar		31.50@32.50
Steel Blooms		32.00@36.00
Steel Slabs		30.00@33.00
Steel Crop Ends		@23.50
St'l Bl'm Ends		23.00@23.50
Old Iron Rails		26.00@26 50
Old Steel Rails		25.50@26.00
No. 1 W. Scrap		20.00@21.00
No. 2 W. Scrap		18.50@19.00
Steel Rails		36.00@36.50
" light sect's		37.00@40.00
Bar Iron		1.90@ 2.00
Iron Nails (60 days)		too unsettled
Steel Nails		" "

Tons.	SALES SINCE LAST REPORT.		
2000	Bessemer, Coke and Coal	S'd Lake Ore	$21.00 cash.
1000	Gray Forge, " "	"	18.75 cash.
1000	G. Fo., all Ore, "	" "	20.75 cash.
1000	" " "	" "	18.50 cash.
1000	" " "	" "	18.50 cash.
200	" " "	" "	18.50 cash.
200	" at Furnace, "	" "	18.50 cash.
100	No. 2 Fo. " "	" "	19.50 cash.
500	Imported Steel Billets. ..		32.00 cash.
500	Gray Forge, Coke Native Ore		18.50 4 mo.
300	Mixed G. Fo. and White, Coke Native Ore		17.75 cash.
200	Foundry.	" "	19.00 cash.
100	No. 1 Foundry	" "	20.00 4 mo.
300	Bessemer, Imported Iron		22.00 cash.
1000	" " "		22.40 cash.
850	" " "		23.50 cash.
300	Iron delivered at Cleveland, Old Rails. ..		27.50 cash.
500	Old Steel Rails,		25.75 cash.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, Dec. 17.

Statistics.

Production Anthracite Coal for week ended December 11th, and year from January 1st:

TONS OF 2240 LBS.	1886. Week.	1886. Year.	1885. Week.	1885. Year.
P. & Read. RR. Co..	241,120	11,059,413	244,838	10,886,814
L. V. RR. Co.	151,898	5,888,057	157,629	5,852,673
D., L. & W. RR. Co.	108,014	4,815,740	124,696	4,812,807
D. & H. Canal Co..	76,978	3,397,928	95,890	3,206,396
Penna. RR.	48,507	3,177,019	65,587	3,121,772
Penna. Coal Co.	15,853	1,421,298	34,447	1,438,208
Penna. Canal Co.	....	470,951	....	425,528
Total	642,370	30,230,406	723,087	29,744,198
Increase	....	486,208	....	....
Decrease	80,717	....	....	....

The above table does not include the amount of coal consumed and sold at the mines, which is about six per cent of the whole production.

Production for corresponding period:

1881	28,251,876	1883	30,566,188
1882	28,251,876	1884	30,123,972

Production Bituminous Coal for week ended December 11th, and year from January 1st:

Tons of 2000 pounds, unless otherwise designated.

EASTERN AND NORTHERN SHIPMENTS.

	1886. Week.	1886. Year.	1885. Week.	1885. Year.
Phila. & Erie RR.	16	16,756	74	26,405
*Cumberland, Md.	45,077	2,391,686	54,423	2,675,682
Barclay, Pa.	3,293	169,126	2,978	217,801
Broad Top, Pa.				
H. & Broad Top RR.	9,788	362,244	4,956	162,608
East Broad Top	.....	.....	.....	.....
Clearfield Region, Pa.				
Snow Shoe	3,443	103,761	3,250	141,424
Karthaus (Keating)	4,407	139,244	4,237	129,402
Tyrone & Clearfield	50,192	2,099,479	65,232	2,745,509
Allegheny Region, Pa.				
Gallitzin & Mountain	12,204	637,066	11,634	518,179
Pocahontas Flat Top Coal.				
Norf'k & West. RR.	13,680	816,668	11,332	564,201
Kanawha Region, W. Va.				
Ches. & Ohio RR.	.....	†1,115,750	.....	†1,000,998
Total	142,100	7,851,780	158,116	8,184,209

* Tons of 2240 lbs.
† Week ended November 21st.

WESTERN SHIPMENTS.

Pittsburg Region, Pa.				
West Penn RR.	5,609	301,182	4,370	209,080
SouthwestPenn. RR.	2,494	145,237	2,104	95,353
Pennsylvania RR.	3,231	263,560	4,876	226,136
Westmoreland Region, Pa.				
Pennsylvania RR.	40,246	1,210,256	36,556	1,129,213
Monongahela Region, Pa.				
Pennsylvania RR.	6,262	380,264	5,103	260,056
Total	57,842	2,300,499	53,009	1,919,838
Grand total	199,942	10,152,279	211,125	10,102,047

Production of Coke on line of Pennsylvania RR. for week ended December 11th, and year from January 1st:

Tons of 2000 pounds.

	1886. Week.	1886. Year.	1885. Week.	1885. Year.
Allegheny Region.	4,740	185,993	4,244	176,961
West Penn. RR.	1,970	102,646	1,764	55,912
Southwest Penn. RR	61,599	2,576,105	47,717	1,766,739
Penn. & W. Region	6,953	313,792	6,273	229,340
Monongahela	5,351	139,614	3,861	92,590
Pittsburg Region	.....	108	.....	.....
Snow-Shoe	729	26,577	583	22,910
Total	81,342	3,344,835	64,442	2,344,452

Anthracite.

The milder weather during the greater portion of the week under review checked the demand for stove coal somewhat; but, excepting this size, the trade is in unusually good condition for this season of the year, while all the indications favor an active business at good prices during the entire winter.

During the week, the general sales agents met and advanced the price of chestnut coal 15 cents a ton. This size is so scarce that it is difficult to get it even at the advanced price.

The Pennsylvania Coal Company is reported to have sold a liberal quantity of coal, afloat in boats, at a concession, and to be in harmony with the other companies now, and firm in its prices. Although this action on the part of the company named displeased the managers of some of the other companies, now that it is done, there is an easier feeling.

The smaller sizes of coal have become very scarce, and have a strong upward tendency in prices. This is said to be due to much less coal than usual being crushed this winter, and to the smaller output.

The January output will be settled next week. At the present time, 2,250,000 tons is thought to be the probable recommendation. Should the weather prove seasonable, this quantity should be readily disposed of at profitable prices.

We quote ordinary free-burning coals, net., f.o.b vessels, as follows:

	Week ended Dec. 17.	Week ended Dec. 10.	Week ended Dec. 3.
Lump	$3.40	$3.40	$3.40 .....
Steamboat	3.40	3.40	3.40 .....
Broken	3.30@ 3.40	3.30	3.30 .....
Egg	3.60	3.60	3.65 .....
Stove	3.85@ 4.00	3.85@ 4.10	3.90@ 4.10
Chestnut	3.65@ 3.80	3.50	3.50 .....
Pea	2.25@ 2.40	2.25	2.10@ 2.25
Buckwheat	1.75	1.70	1.60 .....
Dust	1.25@ 1.40	1.25	1.20 .....

Lehigh pea and buckwheat coals have advanced in sympathy with free-burning coals.

The Reading Company had 34,155 tons of coal in stock at Port Richmond last Saturday, an increase for the week of 553 tons.

The Lehigh Valley Coal Company has issued the following circular:

BETHLEHEM, PA., Nov. 26, 1886.

Commencing with the 1st proximo, the title of L. R. Barrett will be that of Agent. He will have charge of the New York sales department and all points east thereof, also that of Northern New Jersey. His addres will be Room 5, No. 1 Broadway, New York.

E. P. WILBUR, President.

WILLIAM H. SAYRE, Gen. Agent.

Bituminous.

A continued scarcity of cars, and of this class of coal is still reported. The demand is very good, and no coal with a reputation is obtainable at less than $3.25 a ton alongside, while if any quantity should be needed for prompt delivery, a considerably higher price would have to be paid. The combination for the regulation of the bituminous coal trade of the seaboard is looked upon as practically completed, although it is said that it is not actually so. There is a much better feeling in the trade and it is thought that 1887 will prove a fairly satisfactory year, not only to the producers of bituminous coal, but to the carriers as well.

Buffalo. Dec. 16.

[From our Special Correspondent.]

Anthracite coal was advanced in price last week. To dealers on cars at Buffalo and bridges, $4.65 is the quotation for Grate and Egg, and $4.90 for Stove and Chestnut per gross ton; at retail, $5 for Grate and Egg, and $5.25 for Stove and Chestnut per net ton delivered. The demand is very good, indeed, and chestnut size is extraordinarily scarce here and elsewhere. Dealers are well satisfied, as a rule, with business, although consumers complain bitterly of the advance in quotations, as it falls upon those who purchase, say a ton at a time, locally, and in near-by country towns. Cars are very scarce. Bituminous coal is higher, with a strong market and light supplies, consequent upon the lack of cars, which are difficult to be had by the large contractors, and necessarily are still scarcer with the small merchants. No. 1 Brier Hill Lump is quoted at $3.25 per 2000 pounds on track; Reynoldsville screened Lump, $2.50; Daguscahonda Lump, $2.50; Pittsburg screened Lump, $2.50; Fairmount screened Lump, $2.50; and Mercer County screened Lump, $2.40. Run of mine sells from $2@$2.25, according to quality, etc.

Coke is higher, with a good trade doing. Connellsville is quoted at $4.65, and Reynoldsville at $3.75 per 2000 pounds on track.

The Getzville Natural Gas Company, which has been sinking a well for some time past, struck gas on Saturday last at a depth of 201 feet. The flow is estimated at about 40,000 feet daily. Getzville is about five miles from Buffalo.

Vice-President Felton and General Superintendent Thomas, of the Erie Railroad, were in the city on Saturday last. Among the conferences held by them, was one with the coal merchants, but the object was not made public. A general inspection of the company's elevator, docks, etc., formed part of the day's exercises. There is no doubt that extra coal facilities are to be provided next spring in the river and yards.

Perhaps this item will interest you. The city's gas light bill for November was $17,588.55, and for electric lights $8031.50; grand total, $25,619.05. Included in these figures were $764.30 for gas extension expenses.

Messrs. Bell, Lewis & Yates, of this city, are shipping 2000 tons of bituminous coal daily from their mines.

Buffalo lake, harbor and river assumed the appearance of the Arctic regions the past week. Many vessels arrived coated with ice, and very picturesque in appearance. There are still a few craft to be heard from, and anxiety prevails as to their whereabouts. They may be ice-bound or lost!

The Buffalo, Rochester & Pittsburg Railroad has more tonnage of coal than can be handled with present facilities. The company has purchased four locomotives from the West Shore Railroad Company, and is expecting many new gondola cars daily from the works. A few days will suffice to complete arrangements for removing the pressure on its motive power.

It is reported that the Standard Oil Company is preparing to furnish the maufacturers of Cleveland with natural gas at an early day next spring.

The Buffalo Natural Gas Fuel Company turned on the gas for the use of family consumers last Saturday. The president of the company says: "Although we are not getting as much gas through our pipes as we ought to have, due mostly to the length of the line, we are well satisfied with the result of our work thus far."

Your readers are doubtless familiar with the present status of the proposed testing of the legality of the coal and railroad pools by the State of Pennsylvania; therefore our local opinions may be omitted on the matter.

Boston. Dec. 15.

[From our Special Correspondent.]

Small movement—short story. If any change is noticeable in anthracite, it is in direction of a better trade and better prices. Continued cold weather accounts for the one, and the fact that individuals are well sold up accounts chiefly for the other result. Very little individual mined coal has been offering on this market of late. Stove coal, which has sold as low as $3.85, possibly $3.80, f.o.b. at New York, is now difficult to obtain at $4. We hear of nothing under that price. Chestnut size is in very small supply, and is also higher; $3.70 f.o.b. at New York is asked, and little can be had, if any, at a less price.

In soft coal, it is still a little too early to note the beginning of 1887 trade. The only interesting point is, that one of the leading corporations in Lowell has lately been buying coal at retail, because of railroad delays in getting along coal. Something must be done to improve this branch of railroad freighting.

The nominal f.o.b. price at all ports is $2.30. We hear of small lots sold at $3.75 delivered, which is on $2.30 f.o.b. basis. Nobody is cutting rates as yet.

Freight rates have stiffened up; but as most of the vessels have recently been at this end, and a good-sized fleet has lately sailed South, a better supply of vessels is expected at shipping ports.

We quote vessel rates, exclusive of discharging, as follows:

New York, 80@90c.; Philadelphia, $1@$1.10; Baltimore, $1.10@$1.15; Newport News and Norfolk,

$1.05@$1.10; Richmond, $1.10@$1.15; Cape Breton, $1.85@$2 ; Bay of Fundy, $1.60.

Retailers have at last plucked up sufficient courage to advance prices 25 cents a ton. If this move is successful, they will put on another 25-cent advance right away. Trade is better. We quote delivered prices as follows :

White ash, furnace	$5.00@$5.25
" egg	5 25@ 5.50
" stove and nut	5.50@ 5.75
Lehigh furnace, egg and stove	5.50@ 5.75
" nut	5.50@ 6.00
Shamokin egg	@ 6.00
" stove	6.00@ 6.25
Lorberry egg and stove	@ 6.50
Franklin egg and stove	7 00@ 7.50

Wharf prices, 50 to 75 cents a ton less.

Pittsburg. Dec. 16.

[From our Special Correspondent.]

Prices have undergone no quotable change. At this writing, the rivers are rising, with sufficient water for shipping. There is, however, too much ice. Boats will not venture out until the ice has disappeared. The tows are all in good shape. The present rise will enable the boats that left on the last rise to reach port with their empties to be loaded. The amount of coal is estimated at from 4,000,000 to 5,000,000 bushels. Prices range as follows : River, wholesale f.o.b., 4¼@ 4¾c. ; Railroad, 4½@5c. a bushel.

Connellsville Coke.—The demand was active, in excess of the supply. While the supply of cars is more liberal, yet the cry is for more, being insufficient to meet the wants of either operators or consumers, causing anxiety to the furnace-owners. The current rates are : Blast-Furnace, $1.50, f.o.b. cars at ovens ; Foundry, $1.75 ; Crushed, $2.25.

FINANCIAL.

Mining Stocks.

NEW YORK, Friday Evening, Dec. 17.

The storm that raged in the stock market for nearly a week has passed, and the probabilities are, fine weather for some time to come. The business transacted in mining shares was devoid of all interesting features. Sales were small, showing a decrease of 974,726 shares, compared with the preceding week. Prices, on the whole, held their own, and notwithstanding the dullness, there is a firmer feeling, and from present appearances, there will be considerable activity in the near future.

The Comstocks, which were the leading spirits in inaugurating the recent boom, have continued to decline. Consolidated California & Virginia opened at $37 on Saturday, and to-day was $27, with sales of only 339 shares. Prominent operators in Virginia City, it is said, express no alarm at the wavering state of the market, and predict higher prices than have yet been reached. The bonanza shows no sign on paper of "petering out," and it is asserted is good for several millions. We give elsewhere maps showing its position, etc. Ophir was quiet and firm at $15. Sierra Nevada was on a heavy down-grade, going from $8.25 @$4.15, the closing price to-day. Yellow Jacket held its own at from $5.75@$6. Savage advanced, owing to the report of a strike, from $9.50@$11.75 on Wednesday ; no sales have been made. Hale & Norcross went from $5.50@$4. Gould & Curry showed one sale at $6.25 on Tuesday. Best & Belcher opened at $14.50 on Saturday, advanced to $18 on Monday, and declined on the same day to $15.75 ; no sales were again made until to-day, when it stood at $7. Mexican fluctuated between $6 and $7.50. Scorpion stung with one sale at $1. Union Consolidated was lower at from $5.50@$3.30. Sutro Tunnel again records the largest sales on the list, amounting to 58,100 shares, at declining prices ; opening at 37c. on Saturday, and closing to-day at 23c. ; the lowest figure reached during the week was 22c.

The Tuscarora shares, Belle Isle, Navajo, and North Belle Isle, were almost entirely neglected. The prices were respectively 40c., $1, and $4.75.

The "cats," State Line 1 & 4 and 2 & 3, made the fur fly at from 1@4c. for the former, and from 5@4c. for the latter. Oriental & Miller did not join in the game, and stood at 14c.

The promoters of the State Lines on Saturday bought out the stock of the El Cristo Gold and Silver Mining Company, the mines of which are in the State of Tolima, United States of Colombia. The official statement made to the Petroleum and Mining Exchange this week says that the company has a capital stock of $1,000,000, shares $2. The mine was formerly worked by Spanish explorers, in the sixteenth and seventeenth centuries, to a depth of from 200 to 500 feet. It is claimed that only the rich ores were mined. No work was done below the water-level until three years ago, when a syndicate of Spanish owners began sinking a shaft. After going down 70 feet, the mine was purchased by New York capitalists (A. Harpending and others), and machinery was erected capable of exploring the mine to a depth of a thousand feet or more. This machinery has now been running for three months. The main working-shaft is below the second level, and sinking continues for the third, 270 feet below water-level. Developments have been made over 1000 feet on the vein, and large quantities of good ore, it is said, have been exposed. Shipments of rich ore will begin in January, when the company, it is stated, will be in receipt of a regular revenue from that time. The company is free from debt. The stock was listed at $3.20, but declined during the week to $2.50, the closing price to-day ; sales of 1700 shares were made.

But little attention was directed to Colorado stocks. Some 700 shares of Colorado Central were sold on Tuesday at $3 a share. Silver Cliff, on which again considerable interest was centered, went from 42@ 25c. during the week ; no sales were made to-day. Little Pittsburg was also on the downward move at from 85@50c., the latest sale on Wednesday. Little Chief showed sales only on Saturday last at from 32@29c. Leadville opened at 60c., and closed at 53c. to-day ; Tuesday and Wednesday, it sold as low as 50c. Iron Silver remains firm at from $3@$3.10. A few sales of Chrysolite were made to-day, ranging from 60@55c. Bassick was firm at from 12@20c. Amie's ghost was quoted at from 5@3c. Red Elephant, at from 6@4c. La Crosse, which opened at 16c. on Saturday, advanced to 28c. on Monday, but since has declined to 13c., closing at 15@ 14c. to-day. Durango is selling at 5@2c.

The announcement of a dividend of only $25,000, instead of $50,000, as heretofore paid, by the Homestake Mining Company, has depressed the stock to $14 ; it has been steadily declining for the last few weeks ; it opened this week at $16. Deadwood-Terra advanced from $1.70@$2.25 ; declined again to $1.85, and sold to-day at from $2.50@$2.45. Caledonia showed sales only on Monday at $1.80. Father de Smet was quiet at from 65@60c. Iron Hill advanced from 88c.@ $1.05 on Tuesday ; no sales have since been made.

Little has been doing in the Bodies. No sales of Bulwer are reported. Bodie Consolidated varied between $3.35 and $2.80, the closing price. Standard was steady at from $1.50@$1.20 ; the last sale made on Thursday was at $1.40. Mono ruled at from $3.50@$2.50. North Standard was quoted at 25c. Among the other California stocks, Quicksilver Preferred was active at from $28.75@$25.50 ; and Common at from $8@$7. Plymouth Consolidated, which has just declared its regular monthly dividend of $25,000, ranged between $17 and $15.50 ; the last sale was made at $16.38.

Considerable business was done in Alice at from $1.50@$1.60. We have been advised that this mine is in good condition, and that the bullion shipments from December 1st to 11th amounted to $100,000. Considering this condition of affairs, it is surprising that the price of the stock has not advanced. Under the circumstances, it is probable that Walker Brothers, of Salt Lake City, who are now supposed to own nearly three quarters of the stock, are keeping the price down, in order to still further increase their holdings.

A lower movement was shown in Horn-Silver, which declined from $2@$1.75. Some 300 shares of Ontario changed hands at prices ranging from $24.87½@$22, $23 being the last quotation. Stormont was quiet at 14 and 15c.

Castle Creek has declined from 18@11c., at which it was sold to-day.

Rappahannock was active, showing sales of 17,200 shares, at prices ranging from 19@13c.

Central Arizona was lower at from 15@11c.

Silver King has resumed the payment of dividends ; it sold at $6.25.

Coal Stocks.

Some prominent bulls, anxious to buy stocks at lower prices, and bears who were ready to avail themselves of an opportunity to secure a profit in their legitimate sphere, were able to create a scare that assumed the nature of a panic on Wednesday, and enormous declines occurred. The beginning of the decline was due to a tightness of money, which was partially natural, but mostly manipulated. When the demoralization was at its hight at the Stock Exchange, the worst fears as to money were realized, and the rate for time loans ran up to 186 per cent per annum. Yesterday, the rate was as high as 96 per cent, although it fell to 4 per cent before the Stock Exchange closed. To-day, it was up to 51 per cent. and closed at 3.

Now that the storm is over, a legitimate reason for it is looked for, and none can be found. Cool consideration develops the fact that probably one of the most active and soundly prosperous years, in the history of the country, in general business, will soon be ushered in, and now that the wise men have secured the stocks from the foolish and the weak, there is a universal feeling that higher prices will be seen at the Stock Exchange before July 1st than have been seen this year.

The early advances contemplated for all of the stocks dealt with by us in our reviews have necessarily been postponed, and some of them may not occur at all now. Still, the coal properties are as likely to be popular in a further upward movement as any other group.

For the fluctuations of the week, we refer to our table published elsewhere.

The Reading reorganization plan is at last made public, and the best authorities assert that it will surely go through. There was a failure that caused the liquidation of about 28,000 shares to-day. This caused the stock to decline from the best figures of yesterday. People who are in a position to know the intrinsic value of the stock have been large buyers during the past few days.

The New York, Susquehanna & Western Company has issued a reorganization plan that is said to meet with the approval of the largest creditors.

Prices weakened a little at the close to-day, but confidence is in no wise abated.

The following bonds of the Long Valley Coal Company, Nos. 1, 4, 8, 9, 18, 20, 27, 30, 34, 45, 46, 48, 50, 52, 53, 62, will be paid at No. 154 South Fourth street, Philadelphia, Pa., December 31st, 1886, with interest ; after which date, the interest on them will cease.

Meetings.

The annual and special meetings of the following companies will be held at the times mentioned :

Barclay Coal Company, No. 154 South Fourth Street, Philadelphia, Pa., February 3d, at twelve o'clock M., special meeting for the purpose of acting on a proposition to increase the indebtedness of the company for a special purpose, giving consent thereto, and making such further orders as will be required to effect the object.

Kakagon Iron Company, Room 11, Mack Block, Milwaukee, Wis., Dec. 29th, at three o'clock P.M.

Long Valley Coal Company, No. 154 South Fourth street, Philadelphia, Pa., February 3d, at twelve o'clock M., special meeting for the purpose of acting on a proposition to increase certain indebtedness by the execution of a bond and mortgage of the corporate estate.

Morgan Mining Company, Main street, Salt Lake City, Utah, January 8th, at four o'clock P.M.

Philadelphia & Reading Railroad Company, Association Hall, corner Fifteenth and Chestnut streets, Philadelphia, Pa., January 10th, at twelve o'clock M.

Dividends.

Adams Mining Company, of Colorado, has declared dividend No. 36, of ten cents a share, or $15,000, payable on the 21st inst., at the Farmers' Loan and Trust Company, Nos. 20 and 22 Williams street, New York City.

Amy & Silversmith Consolidated Mining Company, of Montana, has declared dividend No. 6, of ten cents a share, or $34,141.90, payable on the 20th inst., at Butte, Mont.

Big Bend Hydraulic Mining Company, of Dakota, has declared dividend No. 35, of three cents a share, or $6000, payable on the 20th inst., at the office, No. 181 Broadway, New York City.

Homestake Mining Company, of Dakota, has declared dividend No. 101, of twenty cents a share, or $25,000, payable on the 24th inst., at Messrs. Lounsbery & Co.'s, No. 15 Broad street, New York City.

Kentuck Mining Company, of Nevada, has declared dividend No. 49, of ten cents a share, or $3000, payable on the 8th inst., at San Francisco.

Joliet Steel Company, of Joliet, Ill., has declared a dividend of six dollars a share, payable January 16th. The dividend on shares registered in New York will be

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par value	Assessments. Total levied to date.	Assessments. Date and amount per share of last.			Dividends. Total paid to date.	Dividends. Date and amount per share of last.		
1	Adams, s. L.	Colo.	$1,500,000	150,000	$10	*	.....	.....	.....	$540,000	Dec.	1886	.15
2	Alice, s. c.	Mont	10,000,000	400,000	25	*	.....	.....	.....	750,000	Sept	1886	.06¼
3	Amie Con., s. L.	Colo.	5,000,000	500,000	10	*	.....	.....	.....	330,000	Oct.	1883	.05
4	Amy & Silversmith, s.	Mon.	.....	341,419	.....	.....	.....	.....	.....	204,852	Dec.	1886	.10
5	Atlantic, c.	Mich	1,000,000	40,000	25	$240,000	Apl.	1875	$1.00	320,000	Jan.	1886	$1.00
6	Argenta, s	Nev.	10,000,000	100,000	100	295,000	July	1885	.10	40,000	Feb.	1880	.20
7	Barbee & Walker, s.	Utah	1,000,000	100,000	10	*	.....	.....	.....	60,000	Nov	1880	.10
8	Bassick, G. S.	Colo.	10,000,000	100,000	100	*	.....	.....	.....	400,000	Mar.	1881	1.00
9	Belle Isle, s.	Nev..	10,000,000	100,000	100	140,000	May	1886	.10	300,000	Dec.	1879	.25
10	Belcher, G. S.	Nev..	10,400,000	104,000	100	2,217,335	ec	1885	.30	15,397,000	Apl	1876	1.00
11	Bellevue Idaho, s. L.	Idah.	1,250,000	125,000	10	26,250	Dec.	1884	.10	150,000	Nov.	1846	.10
12	Big B'nd Hydraulic, G	Dak.	1,000,000	200,000	5	*	.....	.....	.....	210,000	Dec.	1886	.03
13	Black Bear, G.	Cal..	3,000,000	30,000	100	22,500	Dec.	1884	.25	895,000	May	1883	.20
14	Bodie Con., G. S.	Cal..	10,000,000	100,000	100	324,990	Jun.	1886	.50	1,602,572	Apl.	1885	.50
15	Bonanza Developm't	C & M	3,000,000	300,000	10	.....	.....	.....	.....	135,000	Oct.	1882	.15
16	Bonanza K'g, Cons. s.	Cal..	1,000,000	100,000	10	*	.....	.....	.....	185,600	Feb.	1885	.10
17	Boston & Mont, G.	Mont	2,500,000	250,000	10	*	.....	.....	.....	520,000	Jun	1886	.15
18	Breece, s.	Colo.	5,000,000	200,000	25	*	.....	.....	.....	2,000	Feb.	1880	.01
19	Brooklyn Lead, L. s	Utah	500,000	50,000	10	.....	.....	.....	.....	102,000	Sept	1886	.05
20	Bulw r, G.	Cal	1,000,000	100,000	100	40,000	Oct.	1885	20	175,000	Jan.	1884	.10
21	Caledonia, G.	Dak	10,000,000	100,000	100	505,000	May	1885	.15	40,000	Feb.	1886	.10
22	Calumet & Hecla, C.	Mich	2,500,000	100,000	25	1,200,000	..	.....	.....	28,350,000	Nov.	1886	5.00
23	Carbonate Hill, s. L.	Colo.	2,000,000	200,000	10	*	...	.....	.....	80,000	Apl.	1884	.05
24	Caribou Con., s.	Colo.	1,500,000	150,000	10	*	...	.....	.....	50,000	Mch	1880	.10
25	Castle Creek, G.	Idah.	100,000	100,000	1	.....	...	.....	.....	51,000	Oct..	1883	.03
26	Catalpa, s. L.	Colo.	3,000,000	300,000	10	*	...	.....	.....	270,000	May.	1884	.10
27	Central, C.	Mich	500,000	20,000	25	100,000	Sept	1861	.06	1,780,000	Jan.	1886	2.00
28	Christy, s.	Utah	10,000,000	100,000	100	.....	.....	.....	.....	10,000	Jun.	1885	.10
29	Chrysolite, s. L.	Colo.	10,000,000	200,000	50	.....	.....	.....	.....	1,650,000	Dec.	1884	.25
30	Colorado Central, s. L	Colo.	2,750,000	275,000	10	*	.....	.....	.....	171,250	Dec.	1886	.10
31	Cons Cal. & Va., G. s.	Nev..	21,600,000	216,000	100	108,000	Jan.	1885	.20	64,800	Feb.	1886	.30
32	Con Gold Mining, G.	Ga...	500,000	100,000	5	*	.....	.....	.....	108,000	Nov.	1884	.02
33	Contention, s.	Ariz.	12,500,000	250,000	50	...	...	.....	.....	12,587,000	Dec.	1884	.25
34	Crescent, s. L. G.	Utah	15,000,000	600,000	25	±	.....	.....	.....	210,000	Aug.	1886	.05
35	Crown Point, G. s.	Nev.	10,000,000	100,000	100	2,675,000	Feb.	1882	.25	11,588,000	Jan.	1875	2.00
36	Deadwood-Terra, G.	Dak.	5,000,000	200,000	25	*	.....	.....	.....	900,00	Jan.	1883	.10
37	Derbec B. Grav., G. s.	Cal..	10,000,000	10,000	100	90,000	Dec.	1881	.10	140,000	Jun.	1886	.10
38	Dunkin, s. L.	Colo.	5,000,000	200,000	25	*	.....	.....	.....	220,000	Sept	1884	.05
39	Elchorn, G. S.	Mont	1,000,000	100,000	10	50,000	July	1883	.50	145,000	Nov	1886	.50
40	Eureka Con., G. S. L.	Nev..	5,000,000	50,000	100	50,000	July	1886	1.00	4,817,500	July	1882	.25
41	Evening Star, S. L.	Jolo.	500,000	30,000	10	*	.....	.....	.....	1,100,000	Nov	1883	.50
42	Excelsior, G.	Cal..	10,000,000	100,000	100	560,000	Sept	1885	1 00	875,000	Oct.	1880	.25
43	Father de Smet, G.	Dak.	10,000,000	100,000	100	200,000	Nov.	1878	1.00	1,125,000	Dec	1885	.20
44	Franklin, c.	Mich	1,000,000	40,000	25	220,000	Jun.	1871	.....	560,000	Dec.	1886	1.00
45	Freeland, G. S. C.	Colo.	5,000,000	200,000	25	*	.....	.....	.....	190,000	July	1886	.10
46	Fresno Enterprise, G	Cal.	5,000,000	100,000	50	.....	.....	Mch	1883	110,000	July	1882	.10
47	Gould & Curry, G. S.	Nev..	10,800,000	108,000	100	4,055,000	Sept	1886	.50	3,826,000	Oct.	1870	10.00
48	Grand Central, S.	Ariz.	1,000,000	100,000	10	.....	.....	.....	.....	625,000	Dec.	1882	.25
49	Grand Prize, s.	Nev..	10,000,000	100,000	100	570, 0	Apl.	1886	.50	495,000	Mar.	1884	.25
50	Granite, S.	Colo.	125,000	25,000	1	.....	.....	.....	.....	6,250	May	1883	.01
51	Granite Mountain, s.	Mont	10,000,000	400,000	25	.....	.....	.....	.....	1,600,000	Nov.	1886	.25
52	Green Mountain, G.	Cal..	1,250,000	125,000	10	*	.....	.....	.....	212,000	Nov.	1841	.07½
53	Ide & Norcross, G. S	Nev..	11,200,000	112,000	100	4,971,80	Oct.	1886	.40	1,598,000	Apl	1871	5.00
54	Hall-Anderson, G.	N. S.	150,000	150,000	1	.....	.....	.....	.....	7,000	Jan.	1882	.05
55	Hecla Con., s. G. L. C	Mont	1,500,000	30,000	50	...	...	.....	.....	1,032,000	July	1846	.50
56	Hel'a Mg & Red, G. S. L	Mont	3,315,000	663,000	5	*	.....	.....	.....	197,97	July	1886	.06
57	Holmes, S.	Nev..	10,000,000	100,000	100	300,000	Sept	1885	10	75,000	Apl.	1886	.25
58	Holyoke, G.	Idah.	200,000	200,000	1	.....	.....	.....	.....	27,000	Feb.	1883	.10
59	Homestake, G.	Dak.	12,500,000	125,000	100	200,000	July	1878	1.00	3,693,750	Dec	1886	.20
60	Honorine, s. L.	Utah	5 0,000	250,000	2	25,000	Jun	1883	....	87,500	Dec.	1886	.05
61	Hope, s.	Mont	400,000	8,000	50	*	.....	.....	.....	158,252	Oct..	1884	1.50
62	Horn-Silver, S. L.	Utah	10,000,000	400,000	25	*	.....	.....	.....	4,000,000	Nov	1884	.50
63	Idaho, G.	Cal..	310,000	3,100	100	.....	.....	.....	.....	3,750,000	Jun.	1886	7.50
64	Ideal, s. L.	Colo.	1,500,000	150,000	10	.....	.....	.....	.....	15,000	Oct.	1886	.05
65	Independence, s.	Nev..	10,000,000	100,000	100	340,000	Oct.	1886	.20	225,000	Sept	1879	.25
66	Indian Queen, s.	Nev..	250,000	125,000	2	.....	.....	.....	.....	388,750	July	1883	.03
67	Invo, G.	Cal..	500,000	100,000	5	*	.....	.....	.....	45,000	Apl.	1882	.05
68	Iron Hill, s.	Dak.	2,500,000	250,000	0	82,500	Oct.	1885	.....	112,500	Oct.	1886	.05
69	Iron-Silver, s. L.	Colo.	10,000,000	500,000	50	*	.....	.....	.....	1,800,000	Dec	1886	.20
70	Jackson, G. S.	Nev..	5,000,000	50,000	100	10,000	Nov.	1880	.20	45,000	Oct.	1883	.10
71	Jocuistita, S.	Mex.	2,500,000	250,000	10	.....	.....	.....	.....	1,20 ,000	Feb.	1885	.50
72	Kentuck	Nev.	3,000,000	30,000	100	342,000	Nov	1881	.30	1,600,000	Dec.	1886	.10
73	La Plata, s. L.	Colo	2,000,000	200,000	10	*	.....	.....	.....	610,000	Sept	1882	.30
74	Leadville Cons., s. L.	Colo.	4,000,000	400,000	10	*	.....	.....	.....	410,000	Oct.	1886	.05
75	Lexington, G. S.	Mont	4,000,000	40,000	100	.....	.....	.....	.....	565,000	Jan	1885	2.00
76	Little Chief, s. L.	Colo.	10,000,000	200,000	50	*	.....	.....	.....	780,000	Mch	1885	.10
77	Little Pittsburg, s. L	Colo.	20,000,000	200,000	100	*	.....	.....	.....	1,050,000	Mch.	1880	.50
78	Manhattan, s.	Nev.	5,000,000	50,000	100	150,000	July	1879	1.00	437,500	Feb	1886	.25
79	Marguerite, G.	Cal..	500,000	25,000	20	.....	.....	.....	.....	18,750	Oct.	1882	.25
80	Marion Bullion, G	N. C	.....	.....	.....	.....	.....	.....	.....	15,000	Jan	1886	.....
81	Martin White, s.	Nev..	10,000,000	100,000	100	1,150,000	Mar.	1886	25	115,000	Oct.	1886	.25
82	Minnesota, C.	Mich	1,000,000	40,000	25	420,000	Apl.	1886	1 00	1,826,000	Mar	1876	.....
83	Mono, G.	Colo.	5,000,000	5 ,000	100	560,000	Jun	1885	.50	12,500	Mar	1886	.25
84	Montana, Lt., G. S.	Mont	3,300,000	330,000	10	.....	.....	.....	.....	795,000	Oct.	1886	.02
85	Morning Star, s. L.	Colo.	1,000,000	100,000	10	*	.....	.....	.....	650,000	Oct.	1886	.25
86	Moulton, s. G.	Mont	2,000,000	400,000	5	*	.....	.....	.....	320,000	Dec	1886	.07½
87	Mount Pleasant, G.	Cal.	150,000	150,000	1	*	.....	.....	.....	105,000	Mar	1884	.10
88	Mt. Diablo, s.	Nev.	5,000,000	50,000	100	137,500	Jun	1883	2.00	80,000	July	1885	.20
89	Napa, Q.	Cal..	700,000	100,000	7	.....	.....	.....	.....	290,000	Jan	1883	.10
90	Navajo, G. S.	Nev..	10,000,000	100,000	100	395,000	Mar.	1886	25	325,000	Feb	1885	.25
91	N. Hoover Hill, G. S.	N. C.	300,000	120,000	2½	*	.....	.....	.....	30,000	Dec.	1885	.06½
92	New York Hill, G.	Cal..	5,000,000	50,000	100	62,500	Oct	1885	.15	215,000	Aug	1882	.10
93	Northern Belle, S.	Nev..	5,0 0,000	50,000	100	425,000	Jan	1884	8.30	2,400,000	Apl.	1883	50
94	North Belle Isle, S.	Nev..	10,000,000	100,000	100	150,000	Mar	1886	.20	30,000	Aug.	1881	.15
95	Ontario, S. L.	Utah	15,000,000	150,000	100	.....	.....	.....	.....	7,850,000	Nov.	1886	.50
96	Ophir, G. S.	Nev..	10,000,000	100,000	100	4,007,800	Dec.	1886	.50	1,595,000	July	1882	1.00
97	Original, S. C.	Mont	1,500,000	60,000	25	*	.....	.....	.....	114,000	Oct..	1884	.05
98	Osceola, C.	Mich	1,250,000	50,000	25	480,000	Apl.	1876	1.60	972,500	Sept.	1884	25
99	Oxford, G.	N. S.	125,000	125,000	1	*	.....	.....	.....	34,500	Oct..	1885	.02
100	Paradise Valley, G. S.	Nev.	10,000,000	100,000	100	47,000	Mar.	1882	.15	140,000	Nov.	1886	.10
101	Peacock, S. G. C.	N. M.	2,000,000	200,000	10	*	.....	.....	.....	60,000	Nov.	1886	.....
102	Pleasant Valley, G. S.	Cal..	10,000,000	100,000	100	40,000	Mar.	1884	.10	30,000	Dec.	1882	.05
103	Plutus, G. S. C. L.	Colo.	2,000,000	200,000	10	*	.....	.....	.....	20,000	Feb.	1886	.10
104	Plymouth Con., G.	Cal..	5,000,000	100,000	50	*	.....	.....	.....	1,850,000	Jan.	1887	.25
105	Prussian, s. L.	Colo.	1,500,000	150,000	10	.....	.....	.....	.....	132,000	Jan.	1883	.10
106	Quicksilver, pref., Q	Cal..	4,300,000	43,000	100	.....	.....	.....	.....	785,150	Aug.	1886	1.25
107	" com., Q	Cal .	5,700,000	57,000	100	.....	.....	.....	.....	151,000	July	1882	.40
108	Quincy, C.	Mich	1,000,000	40,000	25	200,000	Dec.	1862	.....	4,410,000	July	1886	2.00
109	Richmond, s. L.	Nev..	1,350,000	54,000	25	*	.....	.....	.....	4,245,087	Dec.	1886	1.25
110	Ridge, C.	Mich.	500,000	20,000	25	220,000	Mar	1886	.50	10 ,000	Feb.	1880	.50
111	Rising Sun, s.	Dak..	750,000	150,000	5	*	.....	.....	.....	52,000	May	1881	.07½
112	Robinson Con., s. L.	Colo.	10,000,000	200,000	50	*	.....	.....	.....	585,000	Mar.	1886	.05
113	Robert E. Lee, s. L.	Colo	10,000,000	500,000	20	.....	.....	.....	.....	100,000	Dec.	1882	.10
114	Rooks, G.	Vt..	500,000	50,000	10	*	.....	.....	.....	61,000	Apr	1885	.30
115	San Francisco, C.	Cal..	5,000,000	50,000	100	45,000	Sept	188	.50	20,000	Feb.	1884	.05
116	Savage, s.	Nev..	11,200,000	112,000	100	6,156,000	Jun.	1886	.50	4,460,000	July	1869	3.00
117	Security L. Mg., Mfg.	Colo.	1,000,000	100,000	10	*	.....	.....	.....	50,000	July	1884	.....
118	Shoshone, G.	Idah.	150,000	150,000	1	.....	.....	.....	.....	7,500	Apl.	1883	.01
119	Sierra Buttes, G.	Cal..	225,000	22,500	10	.....	.....	.....	.....	1,438,964	ct.	1886	.37
120	Sierra Grande, s.	N. M.	2,500,000	500,000	5	.....	.....	.....	.....	869,066	Sept	1884	.35
121	Sierra Nevada, G. S.	Nev..	10,000,000	100,000	100	5,972,698	Sept	1886	.25	102,000	Jan.	1871	1.00
122	Silver Cord, G. S. L.	Colo.	5,000,0	500,000	10	.....	.....	.....	.....	225,000	Nov.	1883	.25
123	Silver King, s.	Ariz.	10,000,000	100,000	100	.....	.....	.....	.....	1,775,000	Dec.	1886	.25
124	Silverton, G. S. L.	Colo.	2,000,000	200,000	10	*	.....	.....	.....	70,000	Nov	1886	.02
125	Small Hopes Cons., S.	Colo.	5,000,000	250,000	20	*	.....	.....	.....	2,412,500	Nov.	1886	.20
126	Smuggler, s. L.	Colo.	600,000	60,000	10	.....	.....	.....	.....	66,700	Aug.	1883	.25
127	Socorro, C.	N. M.	250,000	5,000	100	.....	.....	.....	.....	4,000	Mch	1882	.00¾
128	South Yuba, G.	Cal..	2,000,000	80,000	50	*	.....	.....	.....	150,000	Oct.	1881	.75
129	Spring Valley, G.	Cal..	200,000	2 0,000	1	50,000	Oct.	1886	.25	50,0 0	Jan.	1881	.25
130	Standard, G. S.	Cal..	10 000,000	1 0,000	100	25,000	Oct.	1884	.25	4,425,000	Mar.	1884	.25
131	Stormont, S.	Utah	500,0 0	00,000	1	*	.....	.....	.....	155,000	Nov.	1881	.05
132	St. Joseph, L.	Mo..	1,5 0,00	150,000	10	*	.....	.....	.....	724,000	Dec.	1886	.20
133	Syndicate, G.	Cal..	10,000,000	100,000	100	38,729	July	1882	.15	48,308	Sept	1885	.10
134	Tip Top, S.	Ariz	10,000,000	100,0 0	100	250,000	Sept	1883	.25	100,000	Nov.	1881	.20
135	Tombstone, G. S. L.	Ariz	12,500,000	500,000	25	*	.....	.....	.....	1,250,000	Apl.	1882	.10
136	True Fissure, G. S. L.	Utah	1,500,000	150,000	10	*	.....	.....	.....	75,000	Jun.	1883	.15
137	United Verde, C.	Ariz.	3,000,000	300,000	10	*	.....	.....	.....	97,500	Feb.	1884	.20
138	Valencia, M.	N. H.	150,000	1,500	100	*	.....	.....	.....	41,25	Apl	1886	2.50
139	Vizina, S.	Ariz.	5,000,000	200,000	25	*	.....	.....	.....	140,000	Apl.	1882	.10
140	Yankee Girl	Colo.	2,500,000	250,000	10	.....	.....	.....	.....	1,062,500	Oct.	1886	10
141	Yellow Jacket, G. S.	Nev..	12,000,000	12 ,000	100	5,448,000	Dec.	1845	.75	2,184,000	Aug.	1871	1 50

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Value	Assessments. Total levied to date.	Assessments. Date and amount per share of last			
1	Agassiz Cons., s. L.	Colo.	$2,500,000	50,000	$50	*	.....	.....	.....	
2	Albion, s. L.	Nev..	15,000,000	150,000	100	$577,000	July	1882	.50	
3	Allouez, C.	Mich	2,000,000	80,000	25	240,000	Feb.	1884	.50	
4	Alpha Con., G. S.	Nev..	3,000,000	30,000	100	430,000	Mar	1886	.50	
5	Alta, s.	Nev..	10,080,000	100,800	100	1,976,600	Oct.	1886	.25	
6	American Flag, s.	Colo	1,250,000	125,000	10	300,000	Jun.	1877	.25	
7	Anglo-Montana, Lt.	Mon.	600,000	120,000	5	.....	.....	.....	.....	
8	Appalachian, Lt., G.	N. C.	1,500,000	300,000	5	.....	.....	.....	.....	
9	Aspen Mg. & S., s. L.	Colo.	2,000,000	200,000	10	.....	.....	.....	.....	
10	Barcelona, G.	Nev..	5,000,000	200,000	25	*	.....	.....	.....	
11	Battle Creek, G.	Dak.	5,000,000	200,000	25	.....	.....	.....	.....	
12	Bear Creek.	Cal..	300,000	300,000	1	.....	.....	.....	.....	
13	Bechtel Con., G.	Cal..	10,000,000	100,000	100	173,500	Jan.	1883	.10	
14	Belmont, s.	Nev..	5,000,000	50,000	100	735,000	Apl.	18 6	.10	
15	Best & Belcher, G. S	Nev.	10,080,000	100,800	100	1,748,500	Sept	1886	.50	
16	Big Pittsburg, s. L.	Colo.	20,000,000	200,000	100	*	.....	.....	.....	
17	Bi-Metallic, s.	Mon	5,000,000	200,000	25	*	.....	.....	.....	
18	Black Jack, G.	Cal..	250,000	100,000	2½	.....	.....	.....	.....	
19	Bonanza Chief	Mon	1,000,000	1,000,000	1	*	.....	.....	.....	
20	Bondholder.	Colo	500,000	200,000	2½	.....	.....	.....	.....	
21	Boston Con., G.	Cal..	13,000,000	100,000	100	170,000	Nov	1883	.25	
22	Bradshaw, S.	Ariz.	2,250,000	225,000	10	.....	.....	.....	.....	
23	Buckeye Common	Colo.	2,000,000	400,000	5	*	.....	.....	.....	
24	Bull Domingo, S. L.	Colo.	10,000,000	200,000	50	*	.....	.....	.....	
25	Bullion, G. S.	Nev.	10,000,000	100,000	100	1,600,000	Aug	1885	.30	
26	Bve and Bye.	Ariz.	1,000,000	100,000	10	*	.....	.....	.....	
27	Calaveras, G.	Cal..	500,000	500,000	1	*	.....	.....	.....	
28	Catskill, S.	Nev.	1,500,000	30 ,000	5	.....	.....	.....	.....	
29	Cen Contin'l, G. S. L.	C & A	2,000,000	200,000	10	*	.....	.....	.....	
30	Charles Dickens.	Idah	1,250,000	250,000	5	.....	.....	.....	.....	
31	Cherokee, G.	Cal..	1,500,000	15 ,000	10	.....	.....	.....	.....	
32	Cholla r, S.	Nev..	11,200,000	112,000	100	1,096,000	Nov	1886	.50	
33	C nnamon Mt., G. S	Colo.	750,000	150,000	5	*	.....	.....	.....	
34	Climax, S. L.	Colo.	2,000,000	200,000	10	*	.....	.....	.....	
35	Colorado No. 2, S. L	Colo.	100,000	10,000	10	.....	.....	.....	.....	
36	Con. Imperial, G. S.	Nev..	50,000,000	500,000	100	1,100,000	Aug	1886	.10	
37	Con. Pacific, G.	Cal..	6,000,000	6 ,000	100	174,000	Feb.	1886	.15	
38	Cons Silver, S	Mo..	2,500,000	250,000	10	.....	.....	.....	.....	
39	**Con. Queen Cons, C	Ariz	1,400 00	140,000	10	.....	.....	.....	.....	
40	Courtlandt	Colo	500,000	50,000	10	.....	.....	.....	.....	
41	Crescent, S. L.	Colo.	3,000,000	30 ,000	10	*	.....	.....	.....	
42	Crocker, S.	Ariz.	1 ,000,000	10 ,000	100	65,000	May	1886	.20	
43	Crowell, G.	N. C	500,000	5 0,000	1	.....	.....	.....	.....	
44	Dahlonega, G.	Ga..	250,0 0	250,000	1	*	.....	.....	.....	
45	Dandy, S.	Colo.	5,000,000	500,000	10	.....	.....	.....	.....	
46	Dardanelles, G.	Cal..	1,000,000	100,000	10	.....	.....	.....	.....	
47	Decatur, S.	Colo.	1,500,000	300,000	5	*	.....	.....	.....	
48	Denver City, S. L.	Colo.	5,000 0 0	50,000	10	*	.....	.....	.....	
49	Denver Gold.	Colo	300,000	60,000	5	.....	.....	.....	.....	
50	Deseret, G. S.	Utah	500,000	50,000	10	*	.....	.....	.....	
51	Dunderberg, S.	Colo	1,500,000	150,000	10	*	.....	.....	.....	
52	Durango, G.	Colo	500,000	500,000	1	*	.....	.....	.....	
53	Durango T.	Mex	120,000	1,200	100	.....	.....	.....	.....	
54	Eastern Dev. Co., Lt.	N. S.	1,500,000	150,000	10	990,000	Mar.	1886	1.00	
55	Empire Lt., G.	Mon.	5 0,000	100,000	5	.....	.....	.....	.....	
56	Empire, S.	Utah	10,000,000	100,000	100	.....	.....	.....	.....	
57	Enterprise, S. L.	Colo.	800,000	80,000	10	*	.....	.....	.....	
58	Eureka Tunnel, S. L	Nev..	10,000,000	1 0,000	100	*	.....	.....	.....	
59	Exchequer.	Nev.	10,000,000	1 0,000	100	860,000	Oct.	1886	.20	
60	Garfield, Lt., G. S.	Nev.	500,000	100 000	5	.....	.....	.....	.....	
61	Gold Placer, G.	Colo.	5,000,000	200,000	25	*	.....	.....	.....	
62	Goodshaw, G.	Cal..	10,000,000	100,000	100	229,314	Dec.	1885	.25	
63	Grand Belt, C.	Tex.	12,000,000	120,000	100	*	.....	.....	.....	
64	Grand Duke.	C lo.	800,000	80,000	10	.....	.....	.....	.....	
65	Gregory-Bobtail, G.	Colo.	550,000	550,000	1	*	.....	.....	.....	
66	Gregory Con., G.	Mon.	3,000,000	300,000	10	.....	.....	.....	.....	
67	Harlem M. & M. Co., G.	Cal..	1,000,000	200,000	5	.....	.....	.....	.....	
68	Head Cent. & Tr. s. G	Ariz.	10,000,000	100,000	100	.....	.....	.....	.....	
69	Hidalg., S.	Mex	200,000	20,000	10	.....	.....	.....	.....	
70	Highland, C.	Mich	500,000	25,000	25	.....	.....	.....	.....	
71	Hortense, S.	Colo.	2,000,000	200,000	10	.....	.....	.....	.....	
72	Iron Gold & Silver, S	N. M.	2,000,000	200,000	10	.....	.....	.....	.....	
73	Iroquois, C.	Mich	1,250,000	50, 00	25	*	.....	.....	.....	
74	J. D. Reymert.	Ariz	10,000,000	100,000	100	*	.....	.....	.....	
75	Julia Cons., G. S.	Nev..	11,000,00	110,000	100	1,438,000	Nov	188	.10	
76	Kearsarge, C.	Mich	1 250,000	50,000	25	100,000	Apl.	1886	5.00	
77	Ladede	N M.	2,000,000	200,000	10	.....	.....	.....	.....	
78	Lacrosse, G.	Colo.	1 00,000	100,000	10	*	.....	.....	.....	
79	Lee Basin, S. L.	Colo.	5,000,000	500,000	10	*	.....	.....	.....	
80	Leviathan, S.	Nev..	10,000,000	100,000	100	380,000	Sep.	1882	.25	
81	Lucerne, S.	Colo.	5,000,000	500,000	10	*	Jan	1885	.10	
82	Mammoth Bar., G.	Cal..	10,000,000	100,000	100	50,000	Dec	1881	.....	
83	Mariposa pref., G.	Cal..	5,000,000	50,000	100	1,687,500	Feb	1883	.25	
84	" common, G.	Cal..	10,000,000	100,000	100	1,975,000	Dec	1881	.20	
85	May Belle, G.	Cal..	10,000,000	100,000	100	84,000	Mar	1884	.15	
86	Mayflower Gravel.	Cal..	1,0 0,000	100,000	100	110,000	Nov	1886	.25	
87	Mexican, G. S	Nev	10,000,000	100,800	100	2,565,700	Jun.

NEW YORK MINING STOCK QUOTATIONS.

DIVIDEND-PAYING MINES.

NAME AND LOCATION OF COMPANY.	Dec. 11.		Dec. 13.		Dec. 14.		Dec. 15.		Dec. 16.		Dec. 17.		SALES.
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Alice, Mon	1.55	.....	1.60	.....	1.60	1.55	1.60	1.50	.....	.....	1.50	.....	1,200
Amie Con., Co	.04	.....	.05	.03	.04	.....	.04	.....	.05	.....	.04	.03	18,100
Argenta, Ne	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bassick, Co	.....	.....	.....	.....	.20	.12	.....	.....	.18	.....	.20	.....	2,550
Belle Isle, Ne	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.40	.....	200
Bodie Cons., Ca	3.05	.....	3.35	2 90	3.25	.....	3.00	2.80	.....	.....	2.80	.....	2,550
Breece	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.35	.....	189
Bulwer, Ca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Caledonia	.....	.....	1.80	.....	.....	.....	.....	.....	.....	.....	.....	.....	300
Chollar	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chrysolite, Co	.....	.....	.....	.....	3.00	.....	.....	.....	.....	.....	60	.55	600
Colorado Central	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	700
Cons. Cal. & Va., Ne	37.00	30.00	28.75	.....	29.00	.....	30.00	.....	27.50	..	27.00	.....	339
Crown Point	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Deadwood	2.20	1.70	.....	.....	2.25	1.90	1.85	..	2.25	1.90	2.50	2.45	2,000
Dunkin	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
El Cristo	3.20	3.10	.....	.....	.....	.....	3.00	2.75	.....	.....	2.50	.....	1,700
Father de Smet, Dk	.....	.....	.....	.....	.....	.....	.....	.....	.65	.60	.....	.....	300
Freeland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gold Stripe, Ca	.07	.06	.07	.....	.....	.....	.....	.....	.....	.....	.06	.05	2,700
Gould & Curry, Ne	.....	.....	.....	.....	6.25	.....	.....	.....	.....	.....	.....	.....	100
Green Mountain, Ca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hale & Norcross, Ne	5.00	4.60	5.50	.....	.....	.....	4.70	4.50	.....	.....	4.00	.....	500
Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Homestake, Dk	16.00	15 00	.....	.....	.....	.....	.....	.....	.....	.....	14.00	.....	435
Horn-Silver, Ut	2.00	1.90	1.90	.....	2.00	1.90	.....	.....	1.75	.....	1.85	.....	4,900
Independence	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Iron Hill	.....	.....	.88	.....	1.05	1.00	.....	.....	.....	.....	.....	.....	800
Iron Silver, Co	.....	.....	3.05	3.00	3.10	.....	.....	.....	.....	.....	.....	.....	1,100
Leadville C., Co	.60	.....	.....	.....	.53	.50	.50	.....	.52	.....	.55	.53	3,900
Little Chief, Co	.32	.29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,300
Little Pittsburg, Co	.85	.84	.85	.84	.....	.....	.60	.50	.....	.....	.....	.....	1,325
Martin White, Ne	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Navajo, Ne	1.00	.....	.....	.....	1.00	.....	1.00	.....	.....	.....	.....	.....	400
North Belle Isle, Ne	4.75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Ontario, Ut	.....	.....	24.87	.....	.....	.....	22.00	.....	.....	.....	23.00	.....	300
Ophir	15.00	.....	.....	.....	.....	.....	15.00	.....	15.00	.....	.....	.....	130
Plymouth	15.50	.....	17.00	.....	.....	.....	.....	.....	16.50	16.38	.....	.....	310
Prussian	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quicksilver Pref., Ca	27.00	.....	28.00	.....	28.75	28.25	26 13	25.50	.....	.....	.....	.....	1,050
" Com., Ca	.....	.....	.....	.....	8.00	.....	7.00	.....	.....	.....	.....	.....	200
Quincy	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Robinson Cons., Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Savage, Ne	.....	.....	.....	.....	9.50	.....	11.75	.....	.....	.....	.....	.....	300
Sierra Nevada, Ne	.....	.....	8.25	7.00	.....	.....	7.50	7.25	6.13	.....	4.30	4.15	1,115
Silver King, Ar	.....	.....	.....	.....	.....	.....	.....	.....	6.25	.....	.....	.....	200
Spring Valley, Ca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Standard, Ca	.....	.....	1 50	1.20	1.40	1.35	1.40	.....	.....	.....	.....	.....	1,600
Stormont, Ut	.15	.14	.....	.....	.....	.....	.....	.....	.....	.....	.14	.....	1,200
Tip Top, Ar	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Yellow Jacket	.....	.....	.....	.....	.....	.....	6.00	5.75	6.00	.....	.....	.....	700

NON-DIVIDEND-PAYING MINES.

NAME AND LOCATION OF COMPANY.	Dec. 11.		Dec. 13.		Dec. 14.		Dec. 15.		Dec. 16.		Dec. 17.		SALES.
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Alta	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
American Flag	.....	.....	.....	.....	.14	.10	.....	.....	.....	.....	.....	.....	2,200
Barcelona, G	.10	.....	.13	.....	.....	.....	.13	.10	.....	.....	.14	.....	2,700
Bechtel Con., G	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belvidere	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belcher	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Best & B'lcher, G. S.	14.50	.....	18.00	15.75	.....	.....	.....	.....	.....	.....	7.00	.....	300
Big Pittsburg, S. L.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bullion	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bradshaw	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bull-Domingo, S.L.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Castle Creek	18	.....	.18	.17	.....	.....	.....	.....	.....	.....	.11	.....	3,500
Central Ariz'na, S.	.15	.....	.15	.12	.15	.....	.....	.....	.....	.....	.12	.11	3,800
Cons. Imperial	1.15	1.00	..	..	.....	.....	.....	.....	1.05	.....	.....	.....	700
Con. Pacific	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dahlonega	.....	.....	.....	.....	.01	.....	.....	.....	.....	.....	.....	.....	1,000
Decatur	.04	.01	.02	.....	.....	.....	.....	.....	.....	.....	.....	.....	18,000
Durango, G	.05	.04	.04	.03	.....	.....	.02	.....	.....	.....	.....	.....	2,900
Eastern Oregon	.04	.02	.03	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,500
Gold Placer, G	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Harlem M.& M.Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Helena	1.65	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	500
Kossuth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lacrosse, G	.16	.....	.28	.....	.....	.....	.....	.....	.13	.....	.15	.14	3,000
Mariposa Pref., G	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" Com., G	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mexican, G. S	.....	.....	7.50	7.00	6.00	.....	7.50	7 13	.....	.....	.....	.....	550
Mono	3.50	.....	3.50	.....	.....	.....	3.00	2.80	.....	.....	2.50	.....	1,500
Navajo, 2 and 3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Pittsburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
North Standard, G	.....	.....	.25	.....	.....	.....	.....	.....	.....	.....	.....	.....	400
N. Horn-Silv'r, S L	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pri'nt'l & Miller, S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Potosi	.....	.....	.....	.....	.....	.....	.....	.14	.....	.....	.....	.14	1,800
Rappahannock, G	.19	.14	.15	.13	.17	.15	.16	.12	.15	.13	.15	.14	17,200
Red Elephant, S	.06	.....	.04	.....	.05	.....	.....	.....	.....	.....	.....	.....	1,100
" 2 and 3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Scorpion	.....	.....	1.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Silver Cliff, S	.42	.40	.38	.35	.37	.35	.33	.27	.27	.25	.....	.....	9,450
Sonora Con	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Bodie, G	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Bulwer, G	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Pacific	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
State Line, 1 & 4, S	.07	.06	.05	.....	.....	.....	.....	.....	.05	.....	.04	.....	4,900
" Nos. 2 & 3, S	.....	.....	.05	.....	.....	.....	.....	.....	.05	.....	.04	.....	4,000
Sutro Tunnel	.37	.30	.34	.31	.34	.22	.27	.22	.25	.24	.25	.23	58,100
Taylor Plumas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tioga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Unadilla, S	.....	.....	5.50	5.00	.....	.....	5.00	4.65	4 00	.....	3.30	.....	1,250
Union Cons., G. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Utah	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

BOSTON MINING STOCK QUOTATIONS.

	Dec. 10.		Dec. 11.		Dec. 13.		Dec. 14.		Dec. 15.		Dec. 16.		SALES.
Amie	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Allouez	2 13	2.00	2.13	2.00	2.13	.....	2.13	.....	2.00	.....	2.00	.....	2,300
Atlantic	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belle Isle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bodie	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bonanza D	2.12	2.00	2.25	2.00	.....	.....	2.00	1.87	1.75	.....	1.87	.....	1,220
Boston & Montana	5.75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50
Breece	.....	.....	.....	.....	.....	.....	.46	.....	.37½	..	.....	.....	300
Bulwer	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Calumet & Hecla	.....	.....	213	.....	212	.....	213	.....	211	.....	.....	.....	82
Catalpa	.....	.....	.40	.37¼	.....	.....	.....	.....	.33	.....	.27½	.....	1,000
Central	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Con. Virginia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dunkin	.40	.....	.40	.....	.....	.....	.40	.....	.....	.....	.....	.....	500
Eureka	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Franklin	16.50	16.00	16.25	15.75	.....	.....	16.00	15.50	15.00	14.00	14.75	14.50	1,420
Freeland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand Prize	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Honorine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kearsage	9.25	.....	9.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	200
Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Osceola	.....	.....	27.00	.....	27.00	.....	26.50	25.50	26.00	25.50	26.00	.....	172
Quincy	58.50	.....	.....	.....	.....	.....	.....	.....	58.00	.....	54.00	52.00	30
Robinson	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Security	.....	.....	3.25	3.00	6.00	4.00	.....	.....	.....	.....	.....	.....	1,800
Standard	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stormont	.21	.....	.19	.....	.....	.....	.17	.....	.....	.....	.....	.....	1,100

	Dec. 10.		Dec. 11.		Dec. 13.		Dec. 14.		Dec. 15.		Dec. 16.		SALES.
Arnold	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.70	.....	100
Aztec	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Blue Ridge	.....	.....	.26	.....	.....	.....	.26	.....	.....	.....	.37½	.....	1,700
Bowman Silver	.....	.....	.....	.....	.07	.....	.07	.....	.....	.....	.....	.....	800
Cedar Spring	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Con. Pacific	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Copper Falls	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Crescent	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.12½	.....	100
"Cusi"	.35	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Durango	.07	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	200
Empire	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hanover	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Humboldt	.....	.....	.....	.....	.....	.....	.....	.....	.30	.....	.....	.....	100
Huron	3.50	3.00	3.37	3.25	3.35	3.25	.....	.....	3.12	.....	3.00	.....	1,112
Mascot	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mesnard	.....	.....	.....	.....	.....	.....	.45	.....	.....	.....	.45	.....	200
Minnesota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
National	1.50	1.25	1.50	.....	.....	.....	.....	.....	.....	.....	1.50	.....	800
Native	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Napa	1.00	.....	.87½	.....	1.15	1.00	.....	.....	1 15	1.12	1.12	.....	3,800
Ora	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oriental & Miller	.21	.....	.....	.....	.....	.....	.19	.....	.18	.....	.....	.....	1,300
South Side	.25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Sutro Tunnel	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.35	.....	400
Tamarack	.....	.....	.....	.....	.....	.....	.93	.....	.....	.....	.....	.....	20
Washington	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Winthrop	.....	.....	.....	.....	.....	.....	.....	.....	.10	.....	.....	.....	10

New York: Dividend shares sold, 55,483. Non-dividend shares sold, 143,540. Total New York, 199,023.
Boston: Dividend shares sold, 10,174. Non-dividend shares sold, 12,132. Total Boston, 22,306.

COAL STOCKS.

NAME OF COMPANY.	Par value of shares.	Dec. 11.		Dec. 13.		Dec. 14.		Dec. 15.		Dec. 16.		Dec. 17.		Sales.
		H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Barclay Coal	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cameron Coal	50	33¾	32	32½	31	32¼	31¾	32	31	32	31	31⅞	31½	8,870
Col., C. & I	10	38¾	37½	37½	36¼	37½	36½	35⅝	33½	36½	34½	36½	35	18,385
Ches. & O. RR	100	10	9½	9⅛	.....	9¾	9¼	....	.....	.....	.....	9¼	9⅛	770
Consol. Coal	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cumb. C. & I	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Del. & H. C	100	104⅝	103¼	103⅞	101⅛	103⅛	102	101	98¾	101⅛	100	102¼	101⅛	24,559
D., L. & W. RR	50	142⅛	140½	140¾	138⅞	140	137¼	137¼	130	135⅞	131¾	135⅝	132¾	351,760
Elk Lick Coal Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lehigh C. & N.†	50	.....	.....	.....	.....	50	49⅞	50	49	49⅝	.....	.....	.....	777
Lehigh Valley RR.†	50	57	56⅞	.....	.....	56⅞	56¾	56¾	56½	56⅞	56⅝	.....	.....	613
L. & W. C. & I. Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Maryland Coal	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Montauk Coal	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morris & Essex	50	.....	.....	138	.. ..	.....	.....	138	.....	.....	.....	.....	.....	300
New Central Coal	100	17	.....	.....	.....	16½	.....	16	.....	.....	.....	18¼	.....	400
N. J. C. RR	100	51¾	50⅛	51½	50⅝	52⅝	50	51¼	48½	53¼	50½	52⅝	51	147,165
N. Y. & S. Coal	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Penn. Coal	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Penn. RR.†	50	57½	57¼	.....	.....	57	56½	56½	56	57	56	.....	.....	5,046
Ph. & R. RR.*	50	48	44¾	45½	43	45½	41⅛	40	30	38½	36	37	33¾	798,871
Spring Mountain	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tennessee C. & I. Co	.....	109	98	101	85	93	75	75	60½	75	65	78¼	71½	4,301
Westmoreland Coal†	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

* Of the sales of this stock, ——— were in Philadelphia, and ——— in New York.
† The quotations for these stocks are not percentage, but actual price. Total sales, 1,361,817.

San Francisco Mining Stock Quotations.

NAME OF COMPANY.	CLOSING QUOTATIONS. Dec. 10.	Dec. 11.	Dec. 13.	Dec. 14.	Dec. 15.	Dec 16.
Albion	.....	.....	.....	.....	.....	.....
Alpha	.....	.....	.....	.....	.....	.....
Alta	3.75	3.37½	3.25	3.37½	3.12½	2.62½
Argenta	.....	.....	.....	.....	.....	.....
Bechtel	.....	.....	.....	.....	.....	.....
Belcher	.....	.....	.....	.....	.....	.....
Belle Isle	.....	.....	.....	.....	.....	.....
Best & Belcher	15.75	18.00	14.50	13.50	11.00	9.00
Bodie	3.50	3.25	3.37½	3.12½	3.00	3.00
Bulwer	1.87½	1.87½	1.75	1.50	1.62½	1.50
Chollar	6.25	6.25	5.75	4.62½	4.50	4.25
Con. Cal. & Va	37.00	33.00	34.00	34 50	33.00	32.00
Con. Pacific	.45	.40	.40	.55	.50	.50
Crown Point	4.50	6.75	6.25	6.00	5.75	4.25
Eureka Cons	6.50	5.25	5.00	5.00	4.50	4.50
Gould & Curry	6.87½	7.62½	7.00	6.62½	5.00	5.25
Grand Prize	.....	.....	.....	.....	.....	.....
Hale & Norcross	4.87½	5.75	5.12½	4.87½	4.62½	3.62½
Martin White	.....	.....	.....	.....	.....	.....
Mexican	6.50	7.87½	7.00	7.87½	5.87½	5.62½
Mono	3.87½	4.00	2.75	3.00	3.00	2.62½
Mount Diablo	.....	3.00	.....	3.50	3.62½	3.62½
Navajo	.90	1.12½	1.00	.95	.85	.80
Northern Belle	.....	.....	.....	.....	.....	.....
North Belle Isle	.....	.....	.....	.....	.....	.....
Ophir	15.00	17.25	16.50	15.75	14.75	14.25
Potosi	9.75	9.75	9.25	9 00	8.75	7.25
Savage	12.75	13.50	11.25	11.75	11.25	10.75
Scorpion	.....	.....	.....	.....	.....	.....
Sierra Nevada	8.75	8.00	7.50	8.12½	6.75	5.87½
Sutro Tunnel	.....	.....	.....	.....	.....	.....
Tip-Top	.....	.....	.....	.....	.....	.....
Union Cons	5.00	6.12½	5.50	5.62½	4.87½	4.25
Utah	10.50	9.00	9.00	8.00	9.00	5.00
Yellow Jacket	6.25	7.50	6.50	6.25	6.25	5.50

paid at Messrs. John Paton & Co.'s, No. 52 William street, New York, and the dividend on shares registered in Chicago will be paid at the office of the company in Chicago.

Moulton Mining Company, of Montana, has declared dividend No. 11, of seven and a half cents a share, or $30,000, payable on the 20th inst., at the American Loan and Trust Company, No. 115 Broadway, New York City.

Penn Gas-Coal Company of Pennsylvania has

declared a quarterly dividend of one and a half per cent payable on the 30th inst., at the office, No. 209 South Third street, Philadelphia, Pa.

Philadelphia Company (Natural Gas) has declared a dividend of one per cent, payable on the 20th inst., a Pittsburg, Pa.

Plymouth Consolidated Gold Mining Company, of California, has declared dividend No. 44, of twenty-five cents a share, or $25,000, payable January 5th, at the office, No. 23 Nassau street, New York City.

St. Joseph Lead Company, of Missouri, has declared a dividend of twenty cents a share, or $30,000, payable on the 20th inst., at the office, No. 55 Liberty street, New York.

DIVIDENDS PAID BY MINING COMPANIES DURING THE MONTH OF NOVEMBER AND FROM JANUARY 1ST, 1886.

NAME OF COMPANY.	Location	Paid in November.	Since Jan. 1st.
Adams, S. L	Colo.	$22,500	$225,000
Alice, G. S	Mont.		75,000
Amy & Silversmith, S	Mont.	34,142	170,750
Atlantic, C	Mich.		40,000
Bellevue-Idaho, S. L.	Idaho	12,500	62,500
Big Bend Hydraulic, G	Dak.	6,000	60.000
Boston & Montana, G. S.	Mont.		180,000
Brooklyn Lead, L	Utah		20,900
Caledonia, G	Dak.		20.000
Calumet & Hecla, C	Mich.	500,000	1,500,000
Central, C	Mich.		40 000
Colorado Central, S	Col.		83,750
Cons. Cal. & Va., G. S.	Nev.		64,800
Crescent, G. S. L	Utah		30.000
Derbec Blue Grav., G	Cal.		40,000
Elkhorn, G. S.	Mont.	5,000	55,000
Franklin, C	Mich.		40,000
Freeland, G. S. C	Colo		60.000
Granite Mt., S	Mont.		920,000
Hecla Con., G. S. L. C	Mont	15,000	165.000
Helena Mg. & R., G. S. L. C	Mont.		59,670
Holmes, S	Nev		75,000
Homestake, G	Dak.	50,000	550.000
Honorine, S. L	Utah		12,500
Idaho, G	Cal.	15,500	170,500
Idahoan, S	Idaho.		92,000
Ideal, S. L	Colo.		15,000
Iron Hill	Dak.		112,500
Iron Silver, S. L	Colo.		200,000
Jackson, G. S	Nev.		20,000
Leadville Cons., S. L	Colo		40,900
Manhattan, S	Nev.		25,000
Martin White, S	Nev.		25,000
Mono, G	Cal.		12,500
Montana, Lt., G	Mont.		653,400
Morning Star, S. L	Colo.		100,000
Moulton, G. S.	Mont		60,000
Ontario, S	Utah	75,000	825,000
Paradise Valley, G. S.	Nev.		80,000
Peacock, G. S. C	N. Mex.		60,000
Plumas-Eureka, G	Cal		52,729
Plutus, G. S. C	Colo.		20,000
Plymouth Con., G	Cal.	25,000	275,000
Quicksilver Pref., Q	Cal.		118,250
Quincy, C	Mich.		240,000
Richmond, S. L	Nev.		67,500
Robinson Con., S	Colo.		10,000
Sierra Buttes, C	Cal		76,562
Silver King, S	Ariz.		200,000
Silverton, S	Colo.	4,000	44.000
Small Hopes Con., S. L	Colo.	50,000	637,500
St. Joseph, L	Mo		66,000
Valencia, M	N. H.		3,750
Viola, S. L	Idaho	42,500	42,500
Yankee Girl	Colo	25,000	250,000
Young America, G	Cal.		165,000
		$882,142	$9,308,661

G., Gold; S., Silver; L., Lead; C., Copper; Q., Quicksilver; M., Mica.

Pipe Line Certificates.

The following table gives the quotations and sales at the Consolidated Stock and Petroleum Exchange :

	Opening.	Highest.	Lowest.	Closing.	Sales.
Dec. 11	68⅝c.	68½c.	66¾c.	67⅝c.	2,952,000
13	67¾	69¼	67⅛	69⅛	3,093,000
14	69	70⅝	69⅛	70	3,827.000
15	69¾	69¾	66¼	67¼	7,267.000
16	68	70⅜	67⅝	69⅞	4,523,000
17	70¼	70¼	68⅜	68⅞	2,940,000
Total sales in barrels					24,602,300

Boston Copper and Silver Stocks.

[From our Special Correspondent.]

BOSTON, Dec. 16.

The past week has been a dull one in mining stocks, and prices have declined more or less, in sympathy with other stocks, the decline being most marked in Franklin, which is without any apparent reason, unless found in the readiness with which it can be turned into money on a dull market. It is certainly a cheap stock at present prices, as the mine is turning out more copper than ever, the November product being the largest in the history of the company. Calumet & Hecla declined from $213@$211 on sales of less than 100 shares. Tamarack sold at $93, same as last week. Quincy, neglected, not a sale reported for the week. Franklin opened at $16½, declined to $14, with later sales at $14¾; sales about 1300 shares. Osceola declined $1, to $26, on moderate sales. Kearsarge sold at $9¼ and $9. Allouez, steady at $2@$2⅛. Huron has been quite firm at $3¼@$3⅜, with light sales. National sold at $1½ and $1¼. The low-priced stocks have been dull and neglected, the present outlook not being very favorable to the anticipated boom, which is predicted.

In the silver stocks, there is no special feature. The market is inclined to lower prices, and there is not so much disposition to go for them as there was a fortnight ago. Bonanza declined to $1¾. Dunkin, to 40c. Boston & Montana, from $6@$5¾, after selling at $8 last week. Catalpa touched 37½c.; while Napa Quicksilver advanced from $1@$1.15.

At the Mining Exchange, Bowman Silver is heavy at 7c. Security had quite a lively boom for one day, selling up to $6; to-day, $3¼ was the best bid, and it was offered at $4. Blue Ridge is also active, with sales at 25@27½c.

St. Louis Mining Stocks. Dec. 15.

[From our Special Correspondent.]

The market this week has shown the same features as reported in our last. The fancy stocks have fluctuated wildly, and nearly all close at a lower figure than last week. There has been an evident desire to realize, while the support was weak. On the other hand, the so-called "investment stocks," or such as pay regular dividends, and consequently enjoy the confidence of investors, have been very firm, and have sold at full and higher figures. Granite is scarce and in demand at $51⅛; Hope, $50; and Small Hopes has fully kept up to last week's quotation. We do not expect material changes the coming week.

ASSESSMENTS.

COMPANY.	No.	When levied.	Delinquent in office.	Day of sale.	Amount.
Acme, Cal	9	Oct. 25	Nov. 29	Dec. 20	.02½
Aultman, Cal	3	Oct. 26	Nov. 29	Dec. 20	.02½
Caledonia, Nev		Nov. 26			.15
Chollar, Nev	22	Nov. 16	Dec. 21	Jan. 13	.50
Columbus Cons., Nev	4	Oct. 27	Nov. 29	Dec. 20	.50
Comstock & Belfast, Dak	2	Nov. 8	*Dec20	*Jan. 6	¾
Darboy, Dak	2	Nov. 1	Dec. 1	Dec. 15	.01
Golden Fleece, Cal	7	Nov. 22	Dec. 27	Jan. 15	.10
Gorilla, Cal	4	Nov. 26	Dec. 31	Jan. 21	.06
Hailey Hill		Nov. 24	Dec. 29	Jan. 17	.01
John Duncan, Mich		Nov. 24	Dec. 24	Dec. 24	.25
Maryland & Charlotte		Nov. 29	Feb. 1	Feb. 1	.05
May Flower, Cal	33	Nov. 17	Dec. 22	Jan. 17	.25
Mountain Tunnel, Cal	2	Oct. 27	Nov. 29	Dec. 20	.10
North Sierra, Nev	4	Nov. 26	Jan. 8	Jan. 29	.20
One Thousand and One Cons., Cal	21	Nov. 22	Dec. 27	Jan. 17	½
Ophir, Nev		Dec. 15			.50
Orleans Cons, Nev	1	Dec. 6	Jan. 12	Feb. 2	.05
Peer, Ariz	6	Nov. 16	Dec. 22	Jan. 17	.10
Peerless, Ariz	9	Nov. 16	Dec. 23	Jan. 17	.20
Phœnix Cons., Cal	1	Dec. 6	Jan. 10	Jan. 31	.60
Pilot Peak, Cal	14	Oct. 11	Nov. 22	Dec 27	.01
Pocahontas, Dak	2	Sept. 27	*Dec 1	*Dec 27	.01
Polar Star, New Mex	1	Nov. 17	Dec. 31	Jan. 15	.07
Potosi, Nev	26	Nov. 10	Dec. 14	Jan. 4	.30
Ruby Bell, Dak	1	Nov. 4	Dec. 15	Dec. 31	¼
San Luis Cons., Cal	7	Nov. 30	Dec. 31	Jan. 15	½
Santa Anita, Cal	10	Oct. 26	Nov. 29	Dec. 20	.01½
Scorpion, Nev	20	Nov. 12	Dec. 17	Jan. 7	.10
Sierra Iron, Cal	5	Nov. 11	Dec. 29	Jan. 25	2.50
South Fork, Cal	42	Nov. 1	Dec. 1	Jan. 1	1.00
Spring Valley, Cal	1	Oct. 19	Dec. 3	Jan. 3	.25
Summit, Cal	9	Nov. 29	Dec. 29	Jan. 18	.10
Tallulah, Nev	21	Oct. 30	Dec. 8	Dec. 29	.30
Tuscarora Tun'l, Nev		Nov. 4	Dec. 15	Jan. 10	7.50
Tyrolese, Idaho		Oct. 23	Nov. 30	Dec. 28	.15
Union Cons., Nev	34	Nov. 3	Dec. 7	Dec. 28	.25
Utah, Nev	54	Nov. 20	Dec. 24	Jan. 19	.50
West Galena, Dak	5	June 5	*Nov30	*Dec20	½

* The delinquent day and the day of sale were postponed to dates given above.

Important Opportunity.

FOR SALE.—State rights to use the Bietrix Briquette Machinery. By this process, coal-dust, now largely worthless, is so prepared that, by mixing with it about 5 per cent of coal-tar, a fuel superior to lump coal is produced and made into bricks weighing about 2 lbs., 6 lbs., 11 lbs., or 22 lbs. each. These bricks or briquettes are used for domestic purposes, locomotives, steamers, blast-furnaces, etc., with great success.

The actual cost in many cases ought not to exceed the following for an output of 100 tons in 20 hours :

Office expenses per ton Briquettes	.04
Depreciation and interest	.05
Repairs, oil, etc	.03
Labor	.10
Coal-dust	.10
Tar	.30
Total cost per ton	.62

Where the dust is not made into briquettes at the coal mine, cost of freight on it must be added.

Capacity of plants vary from 100 to 300 tons in 2 hours and they cost from about $18,000 to $30,000 erected.

Nearly 80 of these machines are in use in Europe, and the names of all the buyers will be given.

The total capacity of the Bietrix system has grown from nothing in 1878 to nearly 3,500,000 tons yearly in 1886. Some firms have a number of these plants, and make 200,000 tons and upward yearly. In many cases, parties buy the coal-dust and make the briquettes for general sale; in other cases, the plants have been taken by coal-mine owners themselves, or by railroads, etc. The briquettes are superior to lump coal, and do not deteriorate so much when exposed to the weather. A large field and handsome profits in this business await enterprising parties in this country. Address agency,

V. Bietrix & Co.,

Room 22, 8th Floor, Mills Building, New York City.

P. S.—Parties also wanted to manufacture the above. Each plant, with motive power, weighs from about 50 to 120 tons, according to size. A SPECIAL OPPORTUNITY will be given the first parties who purchase a plant for use in the United States.

NAME OF COMPANY.	Location.	Bid.	Asked.
Adams, S. L	Colo.	$5.75	$6.25
Bi-Metallic, S	Mont.		
Cen. Continental, G. S.	Ark.		
Consolidated Silver, S.	Mo.		
Courtland	Colo.		.25
Dandy, S	Colo.		
Durango, T	Mex.		
Grand Duke	Colo.		
Granite Mountain, S	Mont.	51.50	52.00
Hope, S	Mont.	50.00	
Ideal, S. L	Colo.	1.07½	1 10
Iron Gold and Silver	N. Mex		.40
Laclede	N. Mex.		.40
Peacock	N. Mex.	2.75	3.00
Puritan	Colo.		.25
Quincy	Colo.		.12½
Sheridan	N. M	2.75	3.00
Small Hopes Cons., S. L.	Colo.	8.50	9.25
St. Louis & Mex. Imp.	Mex	1.25	1.50
St. Louis & San Fran	Mex.		
St. Louis & Sonora, G. S.	Mex		.20
St. Louis & St. Elmo	Colo.		.45
St. Louis & Yavapai	Ariz	.90	1.00
West Granite, S	Mont.		

CONTRACTS OPEN.

100 STEEL GUN-FORGINGS AND ARMOR—Proposals will be received by the Secretary of the Navy, Navy Department, Washington, D. C., until March 15th, 1887, for about 1310 tons of steel gun-forgings, and about 4500 tons of steel armor plates.

139 MACHINERY AND SUPPLIES—Proposals will be received by the Piedmont Reduction Company, of North Carolina, 115-123 Chestnut Street, Newark, N. J., for the following articles: Fire-bricks and tiles, fire-clay, red bricks, lime, and cement, ore-breaker and crushing-rolls, edge-runner mixing mill, iron-work for water-jacket blast-furnace, blower and air pipes, slag-pots, molds, and tools, blacksmith's forge and tools.

146 PROPOSALS WILL BE RECEIVED AT the War Department, Surgeon-General's Office, Washington, D. C., until December 20th, for the construction and erection of an iron book-stack and for cast-iron file cases.

148 DREDGING—PROPOSALS WILL BE received by Lieut. W. M. Black, U. S. Engineer Office, Jacksonville, Fla., until December 22d, for dredging in Apalachicola Bay and at the mouth of the Carabello River, Fla.

151 INCANDESCENT ELECTRIC LIGHTING Plants—Proposals will be received by the Commissioners for Hospitals for Insane, Governor's Office, Indianapolis, Ind., until January 4th, for three (3) incandescent electric lighting plants of about 600 lights each.

152 PIPES, ETC., FOR WATER-WORKS—Proposals will be received by the Trustees of Water-Works, Franklin, Ohio, until December 23d, 1886, for furnishing 564 tons of 10, 8, 6, and 4-inch cast-iron water-pipe; 26,000 pounds of special castings for above pipe; 44 double-seat water-stop valves for 10, 8, 6, and 4-inch pipe; 59 double-nozzle fire-hydrants; 44 stop-valve boxes; together with the laying of above pipe and special castings, and setting of stop-valves, fire-hydrants, and stop-boxes.

153 STONE AND BRICK-WORK—PROPOSALS will be received by the Supervising Architect, Washington, D. C., until January 3d, 1887, for all the stone-work and brick-work of the superstructure of the extension of the Court-House, etc., at Des Moines, Ia.

154 DREDGING—PROPOSALS WILL BE received by Capt. W. H. Bixby, U. S. Engineers, Wilmington, N. C., until January 4th, 1887, for dredging in Cape Fear River, N. C.

155 WATER-WORKS—PROPOSALS WILL be received by Ed. J. Mastin, Mayor, Huntsville, Ala., for 1000 feet of 8-inch pipe and about 6000 feet of 6-inch pipe, engine for pumping water, and building a new reservoir.

156 ANTHRACITE COAL—PROPOSALS will be received by C. W. Foster, Depot Quartermaster's Office, St. Louis, Mo., until January 5th, 1887, for 180,000 pounds of Anthracite Coal (Locust Mountain Colliery, Pa.), required between February 1st and June 30th, 1887.

157 STONE AND COAL—PROPOSALS WILL be received by Capt. W. H. Bixby, U. S. Engineer Office, Wilmington, N. C., until January 8th, for 2000 tons stone, to be delivered at Beaufort Harbor, N. C., and 800 tons of coal.

158 HOISTING-ENGINE — PROPOSALS will be received by Capt. W. H. Bixby, U. S. Engineers, Wilmington, N. C., until January 8th, for one hoisting engine, to be delivered on the Neuse River, at Kinston, N. C.

159 DREDGING—PROPOSALS WILL BE received by Major Jared A. Smith, U. S. Engineers, Portland, Me., until December 24th, for dredging in Portland Harbor, Me.

160 DREDGING—PROPOSALS WILL BE received by William F. Smith, U. S. Engineer Office, 1112 King street, Wilmington, Del., until December 30th, for dredging Nanticoke River and St. Jones River, Delaware.